

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FREDMAN BROS. FURNITURE COMPANY, INC.
D/B/A GLIDEAWAY SLEEP PRODUCTS
Petitioner

v.

BEDGEAR, LLC
Patent Owner

IPR2017-00351
U.S. Patent No. 9,015,883

DECLARATION OF JENNIFER FRANK RHODES

I, Jennifer Frank Rhodes, hereby declare the following:

I. BACKGROUND AND QUALIFICATIONS

1. I am over 21 years of age and otherwise competent to make this Declaration. I make this Declaration based on facts and matters within my own knowledge and on information provided to me by others.

2. I have been retained by Petitioner and am submitting this declaration to offer my independent expert opinions concerning certain issues requested by Petitioner and raised in the accompanying petition for *inter partes* review (“Petition”) in this matter. My compensation is not based on the substance of the opinions rendered here.

3. I have summarized in this section my educational background, career history, and other relevant qualifications. I have also attached a current version of my resume as **Exhibit 1056**.

4. I am an expert in the field of Textile Design and Textile Product Development.

5. I am the owner of Twin Gingers LLC, a creative services and consulting company serving the textile and consumer products industries specializing in the design, development and commercialization of textiles and textile consumer products, particularly bedding products. I am also an adjunct professor at Philadelphia University teaching a course called Survey of the Textile

Industry, an entry level course for textile and fashion majors providing an overview of all textile manufacturing processes from fiber to finished fabric including yarn manufacturing, fabric formation, fabric decoration and finishing processes, testing and compliance, industry best practices, and the properties and characteristics of all major fiber types both natural and manmade.

6. I received a Bachelor of Science degree in Textile Design, concentration in Wovens, from Philadelphia College of Textiles and Science (now known as Philadelphia University) in 1996.

7. From 1996 to 1998 I was employed by Collins & Aikman Products Co. Inc. (C&A). Upon successful completion of their eight week long corporate management training program and three months long study of specialized weaving defects, for one year I held the position of Third Shift Supervisor, Dobby Weave Room. In this role I was responsible for quality control, production, and labor for one hundred fifty (150) doobby velvet weaving machines and thirty (30) employees. Following my role as supervisor I became the Flat Wovens Technical Designer for Automotive in C&A's Product Development Department. In this role I was charged with developing and testing new yarns and fabric constructions that would meet or exceed the stringent performance requirements of flat woven automotive upholstery. During this time, I created a fabric that was in production for select

Jeep Cherokee models. I also completed Technician Training School for Dornier Rapier Looms.

8. For two and one half years I was a Systems Consultant at Pointcarré USA from 1998 to 2001. I established and managed accounts in the woven and printed textile manufacturing markets. I successfully doubled the annual sales volume of Pointcarré CAD/CAM software in the Textile business unit.

9. From 2001 to 2008, for over seven years, I was Senior Designer at Belding Hausman, Inc. In this role, I designed and developed custom and open-line fabrics for the decorative bedding, drapery, decorative jobbers, contract, and greige goods markets. I was also responsible for conducting regular trend, color, and market research as well as editing and updating color palettes for all fabric collections and yarn libraries. Original fabrics I designed were produced and sold as finished products at retailers such as: Lilly Pulitzer, May Company Department Stores, Federated Department Stores, JCPenney, Sears, Target, and Bed, Bath & Beyond. Additionally, original fabric designs were produced and distributed by companies such as Robert Allen, Carole Fabrics, Kasmir, and Fabricut.

10. I was employed by FXI, formerly Foamex Innovations, Inc., for three and one half years from 2009 to 2012 as Product Development Manager in the company's Consumer Products/Retail division. It was my responsibility to design, develop, and source all textile covers and components for memory foam sleep and

comfort products; primarily mattresses, mattress toppers and pillows. I sourced fabric and sewn product from domestic textile mills and cut & sew operations, and from international mills. I worked intimately with the Research & Development engineers to test the viability of new product development and to create and substantiate all product claims. I created Quality Assurance procedures for all textile inventory and managed the compliance of new product with federal labeling laws, flammability regulations, and other testing requirements. During my time at FXI, original product designs were produced and sold at retailers such as QVC, Bed, Bath & Beyond, Costco, Walmart.com, Samsclub.com, and Anatomic Global. Just before leaving the company, I completed all the design and development of a line of memory foam pillows for the Dr. Breus brand; production began at the time I left the company. FXI was the majority supplier to QVC's private label memory foam sleep products brand, PedicSolutions, and I was a member of the team that built the FXI portion of that business from brand launch to \$25MM in just two years for which my team was recognized with an internal corporate award in 2010 and a vendor award from QVC in 2011. My focus at FXI was to find new and innovative textile technologies and deliver them to the consumer in a sleep product that was aesthetically pleasing, but more importantly would enhance the quality of their sleep with meaningful features and real benefits. I have provided further specific discussion of my background and experience in using spacer fabrics in

mattresses and pillows for the purposes of ventilation and cooling in my “Background of the Technology” discussion in Section IV.B below.

II. MATERIALS REVIEWED

11. As part of my work in connection with this matter, I have studied U.S. Patent No. 9,015,883 (“the ‘883 patent”), including its written description, figures, and claims, in addition to the its U.S. Patent and Trademark Office file history, as well as the related U.S. Patent Nos. 8,646,134 (“the ‘134 Patent) and 8,887,332 (“the ‘332 Patent), and their respective file histories, as well as U.S. Provisional Application No. No. 61/499,907, filed June 22, 2011, to which I understand the ‘883 Patent purports to claim a priority date. I have also reviewed the accompanying Petition for Inter Partes Review of the ‘883 Patent and have also analyzed and considered the following exhibits and prior art references:

Exhibit 1001	U.S. Patent No. 8,887,332 (“the ‘332 Patent”), entitled “Pillow With Gusset Of Open Cell Construction”
Exhibit 1002	File History for U.S. Patent Application No. 14/107,665, which issued as U.S. Patent No. 8,887,332
Exhibit 1003	File History for U.S. Patent Application No. 13/531,122 (“the Parent Application”), which issued as U.S. Patent No. 8,646,134
Exhibit 1004	U.S. Provisional Patent Application No. 61/499,907, filed June 22, 2011
Exhibit 1006	PCT International Publication No. WO 2010/075294 to Rasmussen (“Rasmussen”)
Exhibit 1007	U.S. Provisional Application No. 61/140,622 to Rasmussen (“Rasmussen Provisional”)
Exhibit 1008	U.S. Patent No. 3,109,182 to Doak (“Doak”)
Exhibit 1009	U.S. Patent Application Publication No. US 2007/0261173 to Schlüssel (“Schlüssel”)
Exhibit 1010	U.S. Patent Application Publication No. US 2009/0049870 to

	Garus (“Garus”)
Exhibit 1011	U.S. Patent No. 6,988,286 to Schecter (“Schecter”)
Exhibit 1012	U.S. Patent Application Publication No. US 2007/0246157 to Mason (“Mason”)
Exhibit 1013	U.S. Patent No. 6,760,935 to Burton et al. (“Burton”)
Exhibit 1014	U.S. Patent No. 7,080,421 to Delfs (“Delfs”)
Exhibit 1015	UK Patent Application GB 2270254A to Starkey (“Starkey”)
Exhibit 1016	Excerpt From New Oxford American Dictionary Third Edition
Exhibit 1017	Excerpt from The American Heritage College Dictionary Third Edition
Exhibit 1018	Excerpt from Webster’s New World Dictionary and Thesaurus Second Edition
Exhibit 1019	U.S. Patent No. 5,729,851 to Hollander
Exhibit 1020	U.S. Patent No. 367,953 to Bowman
Exhibit 1021	U.S. Patent No. 1,876,591 to Bawden
Exhibit 1022	U.S. Patent No. 3,290,703 to Worrall
Exhibit 1023	PCT International Publication No. WO 2010/006372 to Kaplan
Exhibit 1024	U.S. Patent No. 2,296,559 to Krakauer
Exhibit 1025	European Patent Application No. EP 1 206 918 to Viviani
Exhibit 1026	U.S. Patent No. 4,989,284 to Gamm
Exhibit 1027	U.S. Patent No. 6,277,770 to Smith, III
Exhibit 1028	U.S. Patent No. 4,665,575 to Raught
Exhibit 1029	Yip – Study of three-dimensional Spacer Fabrics: Physical and Mechanical Properties (2007)
Exhibit 1030	Bruer – Three-Dimensionally Knit Spacer Fabrics: A Review of Production Techniques and Applications
Exhibit 1031	Warp Knitting / Spacer Fabrics – warpknitting4u.com
Exhibit 1032	Ye – Development of the Warp Knitted Spacer Fabrics for Cushion Applications
Exhibit 1033	U.S. Patent No. 5,870,785 to Hoorens “Mat, more specifically a mat for lying on”
Exhibit 1034	Schlenker – Use of warp-knitted spacer textiles in mattresses
Exhibit 1035	Obertshausen – Warp-knitted spacer fabrics for a good nights sleep – innovationintextiles.com
Exhibit 1036	U.S. Patent Application Publication No. 2008/0209638 to Unger “Method for the manufacture of pillows and cushions with spacer fabric, spacer woven fabric and spacer knitted fabric”
Exhibit 1037	Ertenkin – Heat, air and water vapor transfer properties of circular knitted spacer fabrics

Exhibit 1038	Heide – Spacer fabrics: trends Kettenwirk-Praxis 2001
Exhibit 1039	U.S. Patent Application Publication No. 2008/0299854 to Hilleary “Flame resistant spacer fabric”
Exhibit 1040	Lehmann – Elastic, moulded spacer fabrics Kettenwirk-Praxis 1994
Exhibit 1041	Excerpt from Oxford American Dictionary
Exhibit 1042	IPR2016-00715, Paper No. 2, Petition for Inter Partes Review (P.T.A.B. March 6, 2016)
Exhibit 1043	IPR2016-00715, Exhibit No. 1005 – Declaration of S. Adanur (P.T.A.B. March 6, 2016)
Exhibit 1044	European Patent Application No. EP 1 378 193 to Vuiton (English Translation)
Exhibit 1045	European Patent Application No. EP 1 378 193 to Vuiton (French)
Exhibit 1046	King Declaration regarding EP1378193A1 Vuiton Translation to English
Exhibit 1047	U.S. Patent No. 9,015,883 (“the ‘883 Patent”) to Alletto “Pillow with gusset of open cell construction”
Exhibit 1048	File History for U.S. Patent Appl. No. 14/328,008, which issued as U.S. Patent No. 9,015,883
Exhibit 1049	U.S. Patent No. 8,646,134 (“the ‘134 Patent”) to Alletto, Jr. “Pillow with gusset of open cell construction”
Exhibit 1050	U.S. Patent No. 2,639,444 to de Monsabert “Mattress cover”
Exhibit 1051	Declaration of Robert Cooper regarding Bruer article (Exhibit 1030)
Exhibit 1052	Complaint in <i>Bedgear LLC v. Fredman Bros. Furniture Company, Inc. d/b/a Glideaway Sleep Products</i> , Case No. 1:15-cv-6759 (E.D.N.Y) (11-24-2015)
Exhibit 1053	Waiver of Service of Summons (12-31-2015)
Exhibit 1054	Complaint for Declaratory Judgment in <i>Fredman Bros. Furniture Company, Inc. v. Bedgear LLC</i> , Case No. 4:16-cv-00083-SPM (E.D. Mo.) (01-21-2016)
Exhibit 1055	Order of Dismissal without Prejudice (06-24-2016)
Exhibit 1057	Comparison of Rasmussen (Exhibit 1006) with Rasmussen Provisional (Exhibit 1007)
Exhibit 1058	U.S. Patent No. 4,349,925 to Macomber (“Macomber”)

III. LEGAL FRAMEWORK

12. I am a technical expert and do not offer any legal opinions. However, counsel has informed me regarding certain legal principles regarding patentability and related matters under United States patent law, which I have applied in performing my analysis and arriving at my technical opinions in this matter.

13. I have been informed that a patent claim must be both new (under 35 U.S.C. § 102) and non-obvious (under 35 U.S.C. § 103) over the prior art to be patentable.

14. I am informed that “prior art” is defined in pre-AIA 35 U.S.C. § 102 (which I have been informed is the version of 35 U.S.C. § 102 governing this proceeding) and is generally the state of technology in the relevant field prior to the time of the alleged invention and includes such documentary materials as patents and publications, as well as evidence of actual uses or sales of a technology within the United States. Categories of prior art include: (1) anything that was publicly known or used in the United States by someone other than the inventor before the inventor made his invention; (2) anything that was in public use or on sale in the United States more than one year before the application for the patent was filed by the inventor; (3) anything that was patented or described in a printed publication anywhere in the world before the inventor made his invention; (4) anything that was patented or described in a printed publication anywhere in the

world more than one year before the inventor filed the application for the patent; (5) anything that was invented by another person in this country before the inventor made his invention so long as the other person did not abandon, suppress, or conceal his prior invention; and (6) anything that was described in a patent that issued from a patent application filed in the United States or certain foreign countries before the inventor made his invention.

15. Notwithstanding all of these categories of prior art, I am informed that patents and printed publications are the only form of prior art that can be set forth in a petition for inter partes review, such as the petition that this declaration accompanies.

A. Anticipation

16. I am informed that a person cannot obtain a patent on an invention if it is not new, i.e., if someone else has already made the same invention in the prior art. If an invention is not new, then the invention has been “anticipated” by the prior art and is not patentable.

17. I am informed that the implicit or inherent disclosures of a prior art reference may anticipate the claimed invention. Therefore, a claim of a patent is “anticipated” by the prior art if each and every limitation of the claim is taught, disclosed, or found, either expressly or inherently, in a single prior art reference. I

am informed that for a limitation to be taught by inherency, that limitation must necessarily be present in the prior art reference.

18. I am also informed that a single prior art reference may incorporate by reference disclosures from other prior art references and still be considered a single reference. But to incorporate matter by reference, a host document must contain language clearly identifying the subject matter which is incorporated and where it is to be found and a mere reference to another application, or patent, or publication is not an incorporation of anything therein. That is, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents.

B. Obviousness

19. I have been informed that a person cannot obtain a patent on an invention if his or her invention would have been obvious to a person of ordinary skill in the art at the time the invention was made. A conclusion of obviousness may be founded upon a combination of two or more prior art references and is not limited to a single item of prior art, like required for anticipation. In determining whether prior art references render a claim obvious, counsel has informed me that courts and the United State Patent and Trademark Office consider the following factors: (1) the scope and content of the prior art, (2) the differences between the prior art and the claims at issue, (3) the level of skill in the pertinent art, and (4)

secondary considerations of non-obviousness. In addition, the obviousness inquiry should not be done in hindsight. Instead, the obviousness inquiry should be done through the eyes of a person of ordinary skill in the relevant art at the time the patent was filed (or, if applicable, as of the earliest applicable priority date for the patent).

20. In considering whether certain prior art renders a particular patent claim obvious, I understand I can consider the scope and content of the prior art, including the fact that one of skill in the art would regularly look to the disclosures in patents, trade publications, journal articles, industry standards, product literature and documentation, texts describing competitive technologies, requests for comment published by standard setting organizations, and materials from industry conferences. I have been informed that for a reference to be proper for use in an obviousness ground of unpatentability, the reference must be “analogous art” to the claimed invention. Under the correct analysis, any need or problem known in the field of endeavor at the time of the invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. This does not require that the reference be from the same field of endeavor as the claimed invention, in light of the Supreme Court's instruction that when a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. Rather, a reference is

analogous art to the claimed invention if: (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention). In order for a reference to be “reasonably pertinent” to the problem, it must logically have commended itself to an inventor's attention in considering his problem. In determining whether a reference is reasonably pertinent, an examiner should consider the problem faced by the inventor, as reflected either explicitly or implicitly, in the specification. I believe the references that my opinions in this proceeding are based upon are well within the range of references a person of ordinary skill in the art would consult to address the type of problems described in the Challenged Claims.

21. I understand that multiple prior art references can be combined to render a patent claim obvious under 35 U.S.C. § 103 when there was an apparent reason for one of ordinary skill in the art, at the time of the invention, to combine the references, which can include, but is not limited to (A) identifying a teaching, suggestion, or motivation to combine prior art references; (B) combining prior art methods according to known methods to yield predictable results; (C) substituting one known element for another to obtain predictable results; (D) using a known technique to improve a similar device in the same way; (E) applying a known

technique to a known device ready for improvement to yield predictable results; (F) trying a finite number of identified, predictable potential solutions, with a reasonable expectation of success; or (G) identifying that known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art.

22. I am also informed that a claimed invention can be obvious if it would have been obvious to modify a single prior art reference in light of the knowledge of a person of ordinary skill in the art at the time of the invention if there was an apparent reason for one of ordinary skill in the art, at the time of the invention, to make such a modification and that reason can include, but is not limited, the reasons (A) through (G) listed in the preceding paragraph.

23. I am informed that the existence of an explicit teaching, suggestion, or motivation to combine known elements of the prior art is a sufficient, but not a necessary, condition to a finding of obviousness. This so-called “teaching suggestion-motivation” test is not the exclusive test and is not to be applied rigidly in an obviousness analysis. In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. I am informed that if the claim extends to what is obvious; then the claim is invalid. I am further informed the obviousness analysis often

necessitates consideration of the interrelated teachings of multiple patents, the effects of demands known to the technological community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art. All of these issues may be considered to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent.

24. I am also informed that in conducting an obviousness analysis, a precise teaching directed to the specific subject matter of the challenged claim need not be sought out because it is appropriate to take account of the inferences and creative steps that a person of ordinary skill in the art would employ. I understand that the prior art considered can be directed to any need or problem known in the field of endeavor at the time of invention and can provide a reason for combining the elements of the prior art in the manner claimed. In other words, the prior art need not be directed towards solving the same specific problem as the problem addressed by the patent. The individual prior art references themselves need not all be directed towards solving the same problem. Common sense is important and should be considered. Common sense teaches that familiar items may have obvious uses beyond their primary purposes.

25. I also understand that the fact that a particular combination of prior art elements was “obvious to try” may indicate that the combination was obvious even

if no one attempted the combination. If the combination was obvious to try (regardless of whether it was actually tried) or leads to anticipated success, then it is likely the result of ordinary skill and common sense rather than innovation. I further understand that in many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature or knowledge, will drive the design of an invention. I understand that an invention that is a combination of prior art must do more than yield predictable results to be non-obvious.

26. I understand that for a patent claim to be obvious, the claim must be obvious to a person of ordinary skill in the art at the time of the invention. I understand that the factors to consider in determining the level of ordinary skill in the art include (1) the educational level and experience of people working in the field at the time the invention was made, (2) the types of problems faced in the art and the solutions found to those problems, and (3) the sophistication of the technology in the field.

27. I understand that at least the following rationales may support a finding of obviousness:

- Combining prior art elements according to known methods to yield predictable results;
- Simple substitution of one known element for another to obtain predictable results;
- Use of a known technique to improve similar devices (methods, or products) in the same way;

- Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- A predictable variation of work in the same or a different field of endeavor, which a person of ordinary skill would be able to implement;
- If, at the time of the alleged invention, there existed a known problem for which there was an obvious solution encompassed by the patent’s claim;
- Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on technological incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; and/or
- Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior-art reference or to combine prior-art reference teachings to arrive at the claimed invention.

28. I understand that even if a *prima facie* case of obviousness is established, the final determination of obviousness must also consider “secondary considerations” if presented. In most instances, the patentee raises these secondary considerations of non-obviousness. In that context, the patentee argues an invention would not have been obvious in view of these considerations, which include: (a) commercial success of a product due to the merits of the claimed invention; (b) a long-felt, but unsatisfied need for the invention; (c) failure of others to find the solution provided by the claimed invention; (d) deliberate copying of the invention by others; (e) unexpected results achieved by the invention; (f) praise of the invention by others skilled in the art; (g) lack of

independent simultaneous invention within a comparatively short space of time;

(h) teaching away from the invention in the prior art.

29. I further understand that secondary considerations evidence is only relevant if the offering party establishes a connection, or nexus, between the evidence and the claimed invention. The nexus cannot be based on prior art features. The establishment of a nexus is a question of fact. While I understand that Patent Owner has not offered any secondary considerations at this time, I may supplement my opinions in the event that Patent Owner raises secondary considerations during the course of this proceeding.

C. Priority Date

30. I understand that the “priority date” of a patent is typically the date on which the application is filed. I understand, however, that the claims of a patent may be entitled to a priority date earlier than the filing date of the application if the patent makes a priority claim to an earlier patent application, such as a provisional patent application or to a parent application if the patent is a continuation or continuation-in-part. To be entitled to such a priority claim, the subject matter of the patent claim must have been adequately disclosed in the earlier patent application within the line of priority and all intervening applications in the line of priority. I am informed that the subject matter was adequately disclosed if it would

satisfy the written description requirement of pre-AIA 35 U.S.C. § 112, ¶ 1, described below.

31. I am informed that the written description requirement of pre-AIA 35 U.S.C. § 112, ¶ 1 provides that the patent application's specification must convey with reasonable clarity to one of ordinary skill in the art that the inventor was in possession of the claimed invention as of the filing date of the patent application. Possession is shown by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention. In other words, for a patent claim to satisfy the written description requirement, the specification must convey with reasonable clarity to one of ordinary skill in the art that the patentee invented what was claimed in the claim.

32. The written description requirement mandates that an inventor provide enough detail in the patent application to show that, at the time of filing the patent application, the inventor actually had in mind what is later purported to be the invention, as claimed, from the perspective of one of ordinary skill in the art at the time.

33. The purpose of the written description requirement is to ensure that the claims of the invention do not overreach the scope of the inventor's contribution to the field as set forth in the patent specification. As such, the written description

requirement requires that the claims of a patent can be no broader than the supporting disclosure set forth in the specification.

34. The level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology. For generic claims, a number of factors can be utilized for evaluating the adequacy of the disclosure, including the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, and the predictability of the aspect at issue. The written description analysis is governed by a comparison between the claims of the invention and the disclosures set forth in the specification.

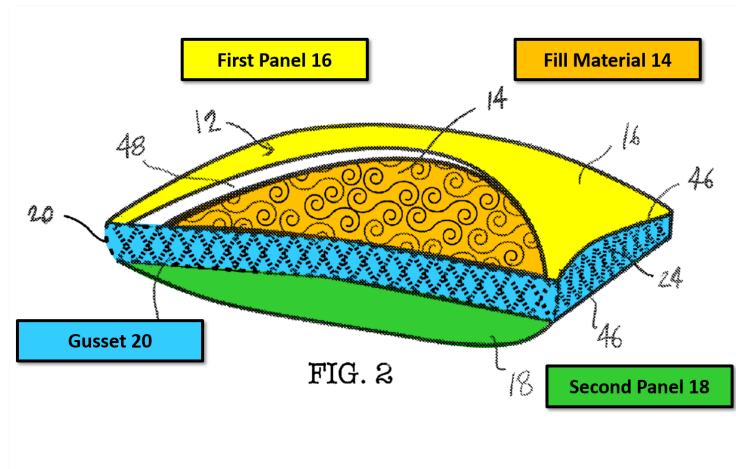
IV. OPINIONS

A. Overview of the '883 Patent

35. This overview is not meant to describe my full understanding of the '883 Patent, but is only used to generally highlight some aspects of the '883 Patent, as well as its subject matter that was held out by the inventor to be purportedly new and non-obvious.

36. To be consistent with other *inter partes* review petitions filed against the '332 and '134 Patents, the citations to the '883 Patent used in this declaration will be cited from the '332 Patent, which shares an identical specification with the

3:39-55. The patent describes that various types of fill can be used, including for example “memory foam.” *Id.* at 3:39-55.



40. The only aspect of the ‘883 Patent that it purportedly holds out as being inventive is that it uses breathable/porous material in the gusset of the pillow to provide for lateral ventilation and, as a result, a cooling effect. I note that the ‘883 Patent claims this concept in a slightly different manner than the ‘332 Patent and recites that the inner surfaces of the first and second panel define a cavity, and that air enters the cavity through pores in the panels and exits the cavity through pores in the gusset. Otherwise, the other aspects of the pillow (e.g., the use of a perimetric gusset joining top and bottom panels, the use of memory foam fill material, etc.) are conventional and well known, as further discussed below. My review, aided by guidance from counsel, of the file history relating to the ‘883 Patent confirms this fact. However, as further discussed below in the Background of the Technology, the concept of utilizing porous/breathable material in the gusset

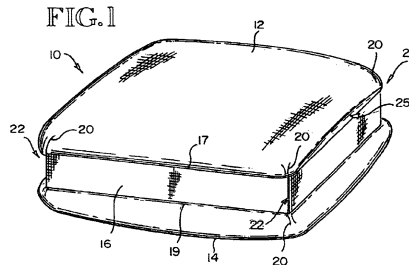
of a pillow to provide for lateral ventilation and cooling (including providing airflow in through the top and bottom panels and airflow out through the gusset) was also already known, not new, and obvious to those of ordinary skill in the art at the time of the alleged invention.

41. I first note that the '883 Patent is a continuation patent that is in the same patent family as other related patents, including U.S. Patent Nos. 8,646,134 ("the '134 Patent") and U.S. Patent No. 8,887,332 ("the '332 Patent"), as I have been informed by counsel. U.S. Patent Application No. 14/328,008, which subsequently issued as the '883 Patent, was filed on July 10, 2014. I am informed that the 14/328,008 patent application was filed as a continuation of Application No. 14/107,665 ("the '665 Application"), which was itself a continuation of Application No. 13/531,122 ("the Parent Application"). The Parent Application was filed on June 22, 2012 and issued as U.S. Patent No. 8,646,134. Ex. 1001. The '883 Patent and the Parent Application both claim priority back to U.S. Provisional Application No. 61/499,907 ("the Provisional Application"), which was filed June 22, 2011. *Id.*; Ex. 1004.

42. As indicated in the file history of the Parent Application (which resulted in the parent '134 Patent), the Examiner rejected the original claims 1 & 5-12 of the Parent Application under § 102(b) based on U.S. Pat. No. 6,760,935 to Burton et al. (Ex. 1013), which the Examiner contended taught a pillow formed by

opposing top and bottom rectangular panels attached to one another around their perimeters by a gusset formed by a strip of cotton material (as show in Fig. 1 of Burton below). Ex. 1003 at 55-56; Ex. 1013 at Fig. 1. The Examiner noted that the applicant's definition of "open cell construction" had recited structural features not present in the claim and gave the term "open cell construction" no patentable weight. *Id.*

Burton (Fig. 1)

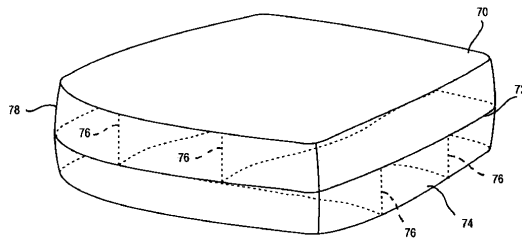


43. The Examiner stated claims 2-4 and 13 would be allowable if rewritten in independent form. Ex. 1003 at 56. In response, Applicant amended the independent claims to require the "open cell construction" be "formed by interlaced or spaced-apart strands" (claim 1 of the '134 Patent) or "formed by apertures defined in said base material" (claim 14 of the '134 Patent). The Examiner then allowed the claims of the parent '134 Patent. *Id.* at 30.

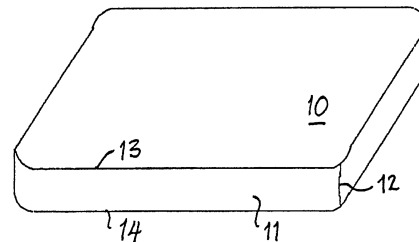
44. The Applicant continued prosecuting in a subsequent continuation patent application filed as U.S. Patent Application No. 14/107,665, which I am informed has the same written description and figures as the Parent Application. Ex. 1002 at 143. Application No. 14/107,665 is the application that ultimately

issued as the '332 Patent. Ex. 1001. During the prosecution of the application that matured into the '332 Patent, the Examiner rejected various claims under § 102(b) based independently on each of Delfs (U.S. Pat. No. 7,080,421) (Ex. 1014), Starkey (GB 2270254A) (Ex. 1015), and Burton, as each reference taught the basic structure of a first panel having an edge defining a perimeter, a second panel having an edge defining a perimeter, and a gusset joining the first and second panels. Ex. 1002 at 47-49.

Delfs (Fig. 8)



Starkey (Fig. 1)



45. The Examiner again noted that the applicant's definition of "open cell construction" had recited structural features not present in the claims and not entitled to any patentable weight. *Id.* Claims 26 and 31 were rejected under § 103(a) over Burton based on an obvious addition of gel filler, as argued by the Examiner. *Id.* at 49-50. Claims 18, 19, and 36-51 were indicated to be allowable if rewritten in independent form. *Id.* at 50. Original claims 32 and 33, which issued as claims 31 and 32, received a first action allowance. *Id.*

46. Applicant then filed the '883 Patent's application as a continuation. Ex. 1048 at 112. The Examiner rejected various claims under §102(b) based on each of

ultimately issued as claim 1), therefore, were never subject to a prior art rejection from the Examiner during prosecution.

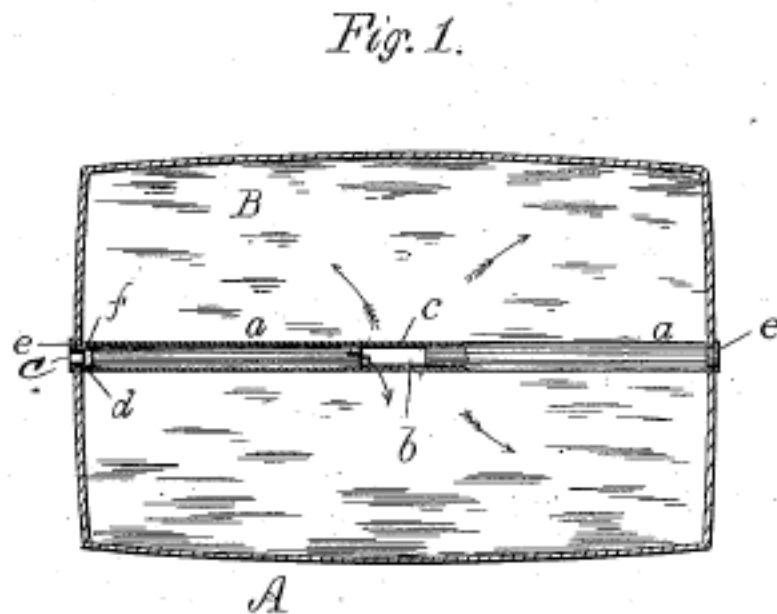
48. It was clear from the cited prior art, including Burton, Delfs, Starkey, and de Monsabert that pillows and other bedding products with top and bottom panels bounded and joined by a perimetric gusset were well known in the prior art. And, by amending claims of the '883 Patent to require that the inner surfaces of the first and second panel define a cavity, and that air enters the cavity through pores in the panels and exits the cavity through pores in the gusset, the applicant was able to obtain allowance over the cited prior art. As discussed below, however, the '883 Patent's purported novel concept of a pillow having top and bottom panels through which air enters joined by a gusset through which air exits was already known in the prior art and was not new or non-obvious to persons of ordinary skill in the art at the time of the alleged invention.

B. Background of the Technology

49. I was asked to provide a summary of the state of the art relevant to the '883 Patent as it would have been known to a person of ordinary skill in the art prior to the date of the alleged invention of the '883 Patent.¹

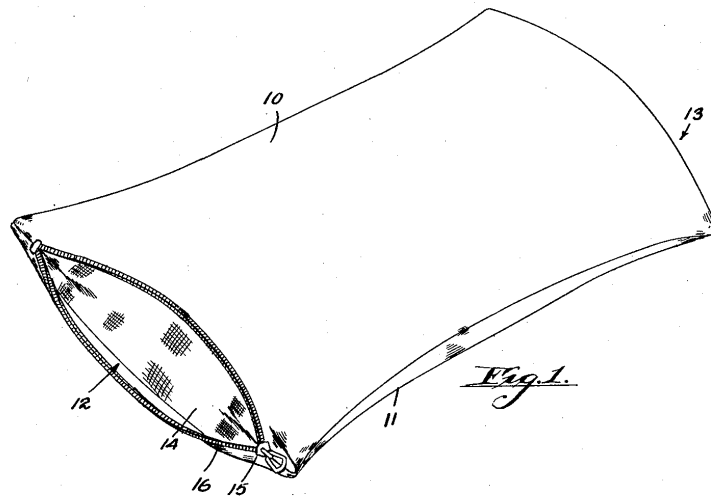
¹ For purposes of assessing the state of the art prior to the alleged invention of the '883 Patent, I have been instructed by counsel to conservatively assume a date of invention of June 22, 2011, the claimed priority date of the '883 Patent, even though, as I discuss below in Section IV.E, it is my opinion that the earliest priority date to which the '883 Patent would be entitled is actually be one year later, i.e., June 22, 2012.

50. Bed pillows incorporating vents for airflow have been known for at least a century, if not longer. For example, U.S. Patent No. 367,953 to Bowman issued on August 9, 1887 and describes a pillow with “an air conduit or ducts which shall readily permit the flow of air centrally or thereabout within their interior.” Ex. 1020, *Bowman* at page 1, lines 15-26. As shown in Fig. 1 of Bowman below, the pillow disclosed incorporates flexible air ducts for permitting and expelling air to the pillow’s filling, aerating it:

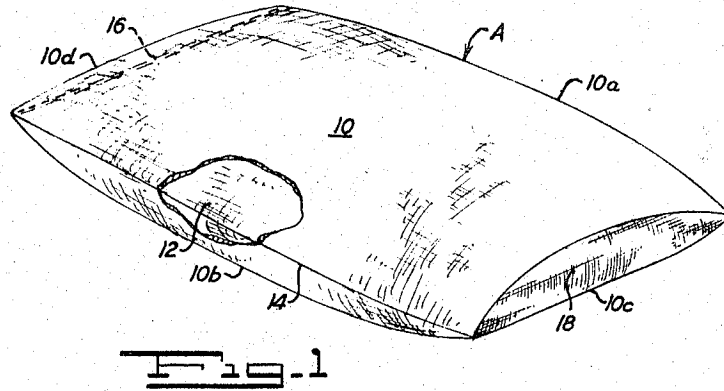


As another example, U.S. Patent No. 1,876,591 to Bawden, filed on March 26, 1930, describes “an improved pillow wherein provision is made to facilitate proper ventilation for the filling of the pillow” to as to prevent “heat” buildup by allowing the pillow to be “opened at its ends to facilitate the ingress and egress of air for

ventilation purposes” but “does not permit the escape of any filling.” Ex. 1021, *Bawden*, at page 1, lines 4-27. The openings at each end of *Bawden* are covered by sections 14 of “relatively porous or loosely woven fabric” such as “in the nature of cheese cloth.” *Id.* at page 1, lines 60-73. One of the porous vents on the ends of *Bawden* is shown on the left end of Fig. 1 of *Bawden* below (along with a zipper to allow opening and closing of the vent).



U.S. Patent No. 3,290,703 to Worrall (Ex. 1022), filed Sept. 24, 1964, provides yet another example of a pillow utilizing a porous vent (i.e., “coarse netting 18”) between the top and bottom faces of a pillow to provide for “a very free breathing action due to the netting 18.” The vent of Worrall formed by the netting 18 is on the right side of Fig. 1 of Worrall below.



51. While some of the materials of which pillows are made have changed over the last one hundred years, the concept of using vents for airflow is one that has continued to be used in pillows. Much like one hundred years ago, pillow designs still continue to be used that include vents, such as taught by the Kaplan publication, WO2010/006372 (Ex. 1023), filed July 16, 2009, and published on January 21, 2010. Kaplan similarly depicts a conventional pillow casing having “a vent through which air inside the pillow case is able to escape rapidly.” Ex. 1023 at Abstract. The “vent 40 is made of porous fabric,” *id.* at 12:1-7, and “comprises fabric material which has a composition that allows faster air-throughput compared to the air-throughput capability of the polyurethane sheet material 11 that is used for the rest of the pillow-cover 10.” *Id.* at 10:7-9. The vent 40 is shown in Fig. 4C below of Kaplan.

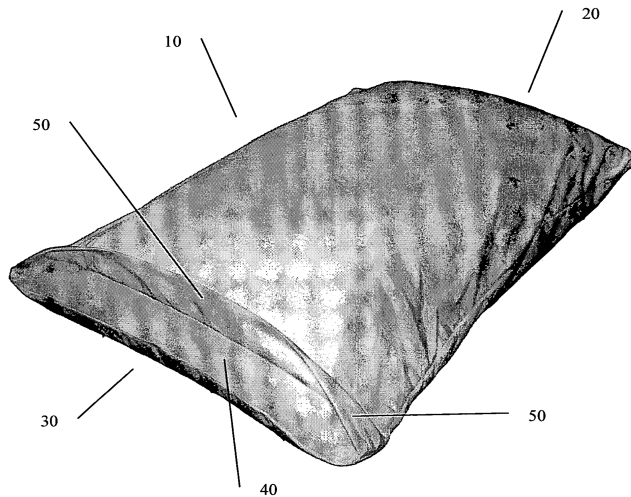
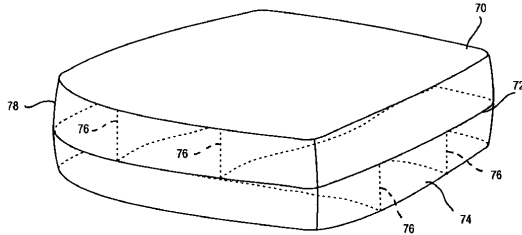


Figure 4C

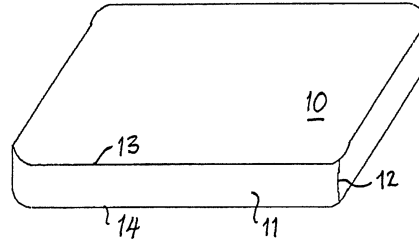
Thus, it can be seen that the concept of using porous pillow vents for airflow has long been well known and has continued to be used over at least the past century.

52. Similarly, the basic design of a pillow with rectangular top and bottom panels perimetrically bound and joined by a gusset has been well known for decades, if not centuries prior to the '883 Patent. Indeed, as discussed above, numerous such prior art references, including Burton, Delfs, and Starkey were used by the examiner to reject early versions of the claims of the '883 Patent. Exs. 1013-15. The Hollander prior art reference similarly provides an example of this well-known and conventional pillow design. Ex. 1019. These prior art pillows are shown below:

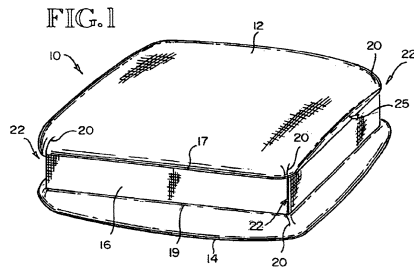
Delfs (Fig. 8)



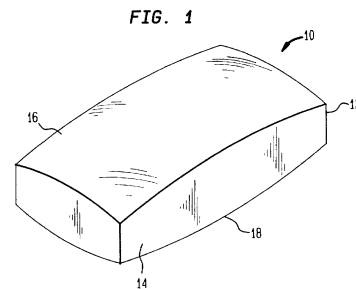
Starkey (Fig. 1)



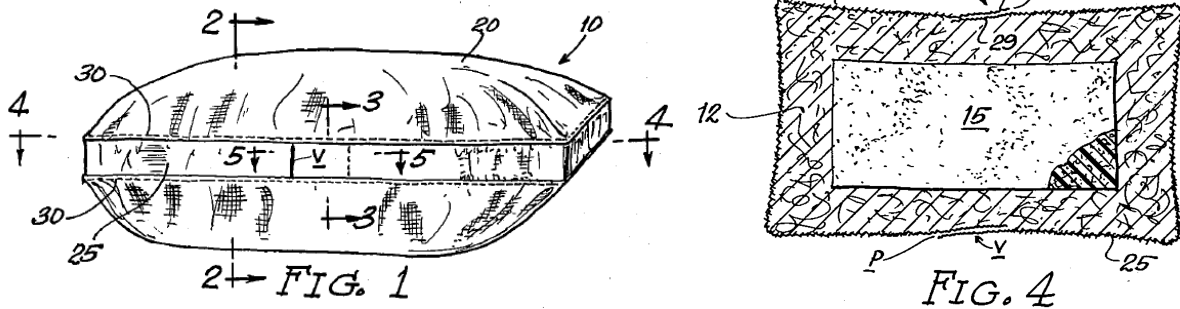
Burton (Fig. 1)



Hollander (Fig. 1)



53. Further, even the concept of combining pillow vents for airflow with gusseted pillows having a perimetric gusset joining rectangular top and bottom panels has long been known. For example, U.S. Patent No. 3,109,182 to Doak (**Ex. 1008**), filed Dec. 29, 1960, describes a pillow comprised of a filling disposed within a cover formed of woven textile fabric or the like, such as Dacron, i.e., a trade name for a polyester fabric, with a “webbed portion 25” which extends around the perimeter of the pillow. Ex. 1008, *Doak* at 2:12-31; Fig. 1 (side view); Fig. 4 (top view).

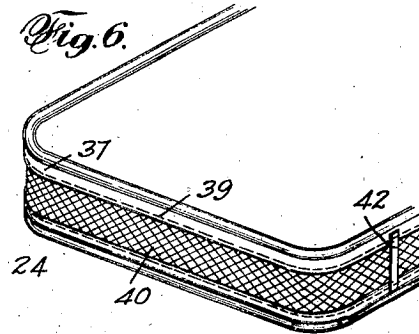


Id. at Fig. 1. Doak’s “webbed portion” constitutes a gusset, and this gusset includes “valve elements V” allowing the unobstructed passage of air. *Id.* at 2:18-31; 2:45-50; 3:3-12 (“forming a substantially continuous air channel”). The valves provide “a valve-like opening . . . for ventilation.” *Id.* at 1:40-45. Thus, as demonstrated by Doak, the concept of combining pillow vents into the gusset of a conventional rectangular gusseted pillow to provide lateral ventilation was already known well in advance of the ‘332 Patent.

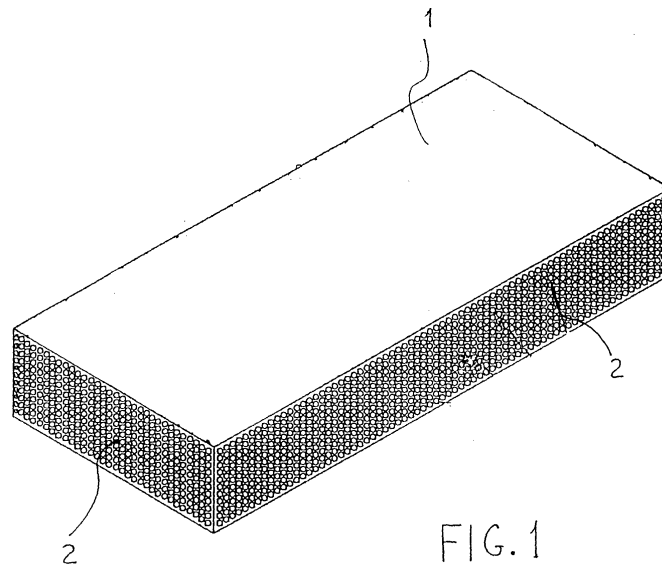
54. In addition to placing vents for lateral ventilation into the gusset of pillows, it has also long been well known to place vents into the sides of mattresses and seat cushions well before the ‘883 Patent. For example, U.S. Patent No. 2,296,559 to Krakauer (Ex. 1024), filed June 27, 1938, describes a mattress with mesh walls 40 such that “the entire interior is readily ventilated through the interstices of said mesh,” as shown below in Fig. 6 of Krakauer. Ex. 1024 at 4:12-24; Fig. 6. Similarly, European Patent No. EP 1206918 to Viviani (Ex. 1025), published May 22, 2002 and entitled, “Outside covering for mattress with the perimetric lateral surface provided with holes for the passage of air to its inside,”

similarly describes a mattress with perimetric side walls made of mesh to provide for lateral ventilation and cooling, as shown below in Fig. 1 of Viviani. Ex. 1025, at Abstract, Figs. 1-2.

Krakauer (Fig. 6)



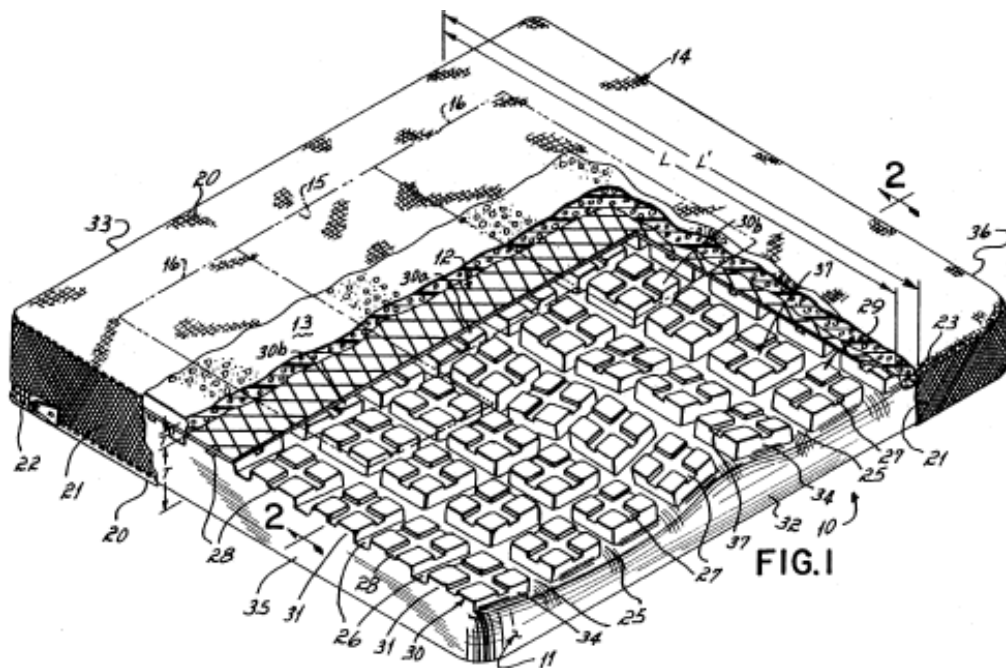
Viviani (Fig. 1)



55. Another example comes from U.S. Patent No. 4,989,284 to Gamm et al. (Ex. 1026), filed Oct. 12, 1989, which discloses a cushion for improved “airflow ventilation” constructed of foam enclosed within a fabric cover comprised

of “a breathable fabric 20 on its top and bottom surfaces, and a mesh fabric 21 which defines its side wall surfaces” and which “are provided to enhance airflow laterally through the cover.” Ex. 1026 at 1:23-28, 2:13-18, 2:27-36, Fig. 1, claim 7 (“side walls of an open mesh weave fabric, said open mesh weave fabric not hindering airflow”).

Gamm (Fig. 1)



Prior to the alleged invention of the ‘883 Patent, persons of ordinary skill in the art regularly looked to designs used in the related areas of mattresses and cushions to design pillows, and vice versa. Thus, it is not surprising that the concept of utilizing porous/breathable materials in top and bottom panels joined by perimetric side walls made of materials having greater porosity/breathability in mattresses, cushions, and pillows to provide for lateral ventilation was well known prior to the

alleged invention of the '883 Patent. Similarly, the concept of air entering a pillow through top and bottom panels and exiting the pillow through the gusset was well known prior to the alleged invention of the '883 Patent. A person of ordinary skill in the art would not have found this concept to be new or non-obvious and could readily incorporate such a design into pillows without undue experimentation and such a design would yield predictable results.

56. The '883 Patent also describes in its specification that it utilizes "3D spacer fabric" as a specific preferred type of porous/breathable material for use in the gusset of the alleged inventive pillow. Ex. 1001 at 2:47-58. However, even the use of 3D spacer fabric in the side walls of mattresses and pillows was known before the alleged invention of the '883 Patent. As I have described further below, I was personally working with 3D spacer fabrics in the context of mattresses and pillows prior to the alleged date of invention of the '883 patent, and, it was known in the industry at the time that such fabrics were ideally suited for providing cooling and ventilation in bedding products. Vendors who sold textiles into the bedding space were regularly "pushing" the use of such materials, so it was only natural and a product of common sense for mattress and pillow designers to incorporate 3D spacer fabrics into mattresses and pillows.

57. 3D spacer fabric, or, synonymously, just "spacer fabric" for short, is generally understood by skilled artisans in the bedding space to be "a three-

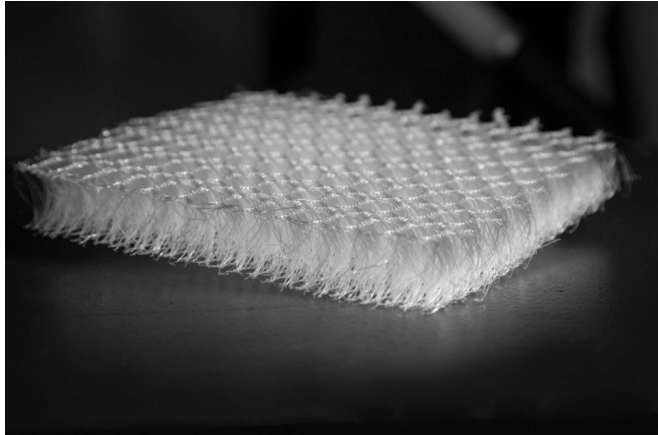
dimensional knitted fabric consisting of two separate knitted substrates which are joined together and kept apart by spacer yarns.”² Spacer fabrics can be thought of like a “sandwich” with a top layer, a bottom layer, and a series of fibers or filaments in a spacer layer joining the top and bottom layers.³ 3D spacer fabrics have been well known by skilled artisans before the ‘883 Patent to be “highly breathable” based on their high air permeability, ability to transport water vapor, and thermal conductivity.⁴ Some exemplary images of 3D spacer fabrics are shown below:⁵

² Ex. 1029 at 1, Yip et al., “Study of three-dimensional spacer fabrics: Physical and mechanical properties,” *Journal of Materials Processing Technology* 206 (2008), pp. 359-364 (“Yip”); see also Ex. 1040, Lehmann, W., “Elastic, moulded spacer fabrics,” *Kettenwirk-Praxis*, 1994, E19-E20 (“Spacer fabrics are produced on rib raschel machines having two needle bars and consist of two separate warp-knitted fabrics which are joined together, or rather kept apart, by spacer yarns.”).

³ Ex. 1030, Bruer et al., “Three-Dimensionally Knit Spacer Fabrics: A Review of Production Techniques and Applications,” *Journal of Textile and Apparel, Technology and Management*, Vol. 4, Issue 4, Summer 2005 (“Bruer”).

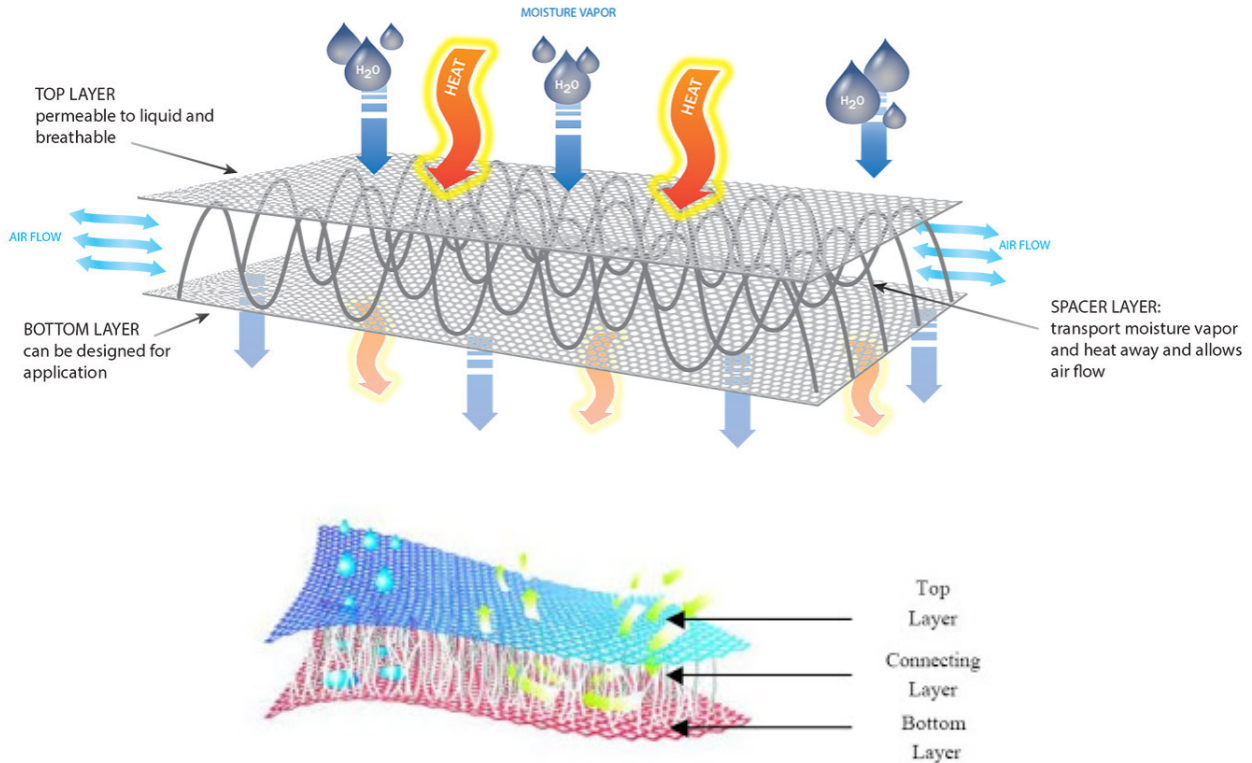
⁴ Ex. 1029, Yip, at 1; Ex. 1009, Schlüssel, at [0016]; Ex. 1030, Bruer, at 22-25.

⁵ See <http://springscreative.com/products/spacerfabric/>; see also Ex. 1031, Warp Knitting – Spacer Fabrics, September 9, 2009, <http://www.warpknitting4u.com/2009/09/warp-knitting-spacer-fabrics.html?showComment=1259883571646#c250557749240440321>



Exemplary functional diagrams illustrating 3D spacer fabrics and their ability to readily transport air, heat, and water vapor are shown below:⁶

⁶ See <http://springscreative.com/products/spacerfabric/>; see also Ex. 1031, Warp Knitting – Spacer Fabrics, September 9, 2009, <http://www.warpknitting4u.com/2009/09/warp-knitting-spacer-fabrics.html?showComment=1259883571646#c250557749240440321>; Ex. 1030, Bruer, at 13.



58. Spacer fabrics are most commonly knitted fabrics produced using warp knitting. Knitting is the interlooping of yarns to form a textile structure (i.e., threads follow a meandering path to form loops, as compared to weaving in which threads are straight and interlaced at right angles to form fabric).⁷ Warp-knitted spacer fabrics produced on double needle bar Raschel knitting machines are commonly used spacer fabrics.⁸

59. Spacer fabrics have long been known, with commercial developer Matthew Townsend of Leicester filing for an initial patent for spacer fabrics in

⁷ See, e.g., Ex. 1030, Bruer, at 1.

⁸ See, e.g., Ex. 1032, Ye et al., “Development of the Warp Knitted Spacer Fabrics for Cushion Applications,” *Journal of Industrial Textiles*, Vol. 37, No. 3-January 2008, pp.213-223, at 214-15; Ex. 1030, Bruer, at 13.

1868.⁹ Spacer fabrics, though, have increased in popularity and use over about the past 20 years or so.¹⁰ During this time frame, spacer fabrics have been used in applications where their durability and high breathability have been advantageous, including in athletic apparel and shoes, automotive car seats, medical textiles, civil engineering and construction, and safety/protection.¹¹

60. A person of ordinary skill in the art would have known prior to the alleged invention of the '883 Patent that spacer fabrics could be used in bedding, including in mattresses, cushions, and pillows, to provide for better ventilation and cooling by virtue of their highly breathable nature.

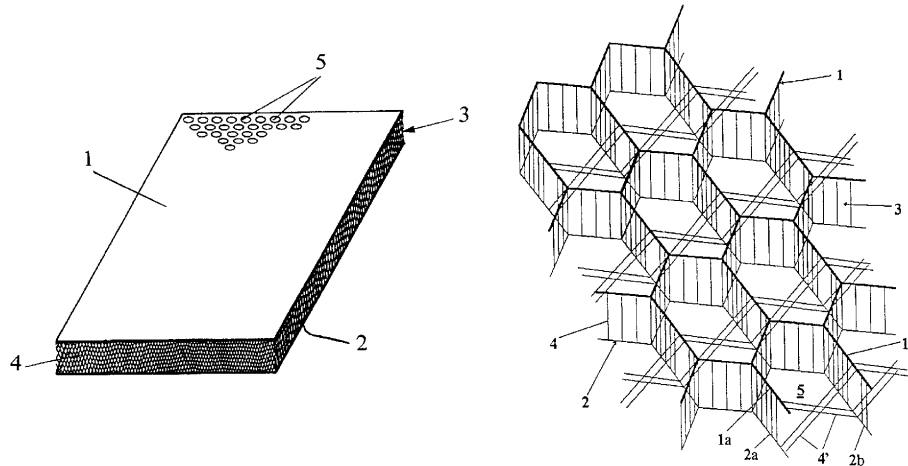
61. For example, U.S. Patent No. 5,870,785 to Hoorens (Ex. 1033), which bears a PCT filing date of July 5, 1995, describes a mat or mattress topper made of an “open three-dimensional knitted structure with mesh openings” that has three layers, a top layer, a bottom layer, and a middle layer with an open structure of monofilaments. Ex. 1033, at Abstract, 1:1-38; Fig. 1. This structure would be understood by a person of skill in the art to be a spacer fabric. Hoorens teaches that its air permeable three-dimensional knitted structure is used “to prevent overheating of the parts of the body in contact with the mat,” by providing a “permanent flow of air.” *Id.* at 1:1-26.

⁹ Ex. 1030, Bruer, at 13.

¹⁰ *See, e.g.*, Ex. 1031, at 1; Ex. 1030; Ex. 1038; Ex. 1040.

¹¹ Ex. 1030, Bruer, at 22-25; Ex. 1029, Yip, at 1

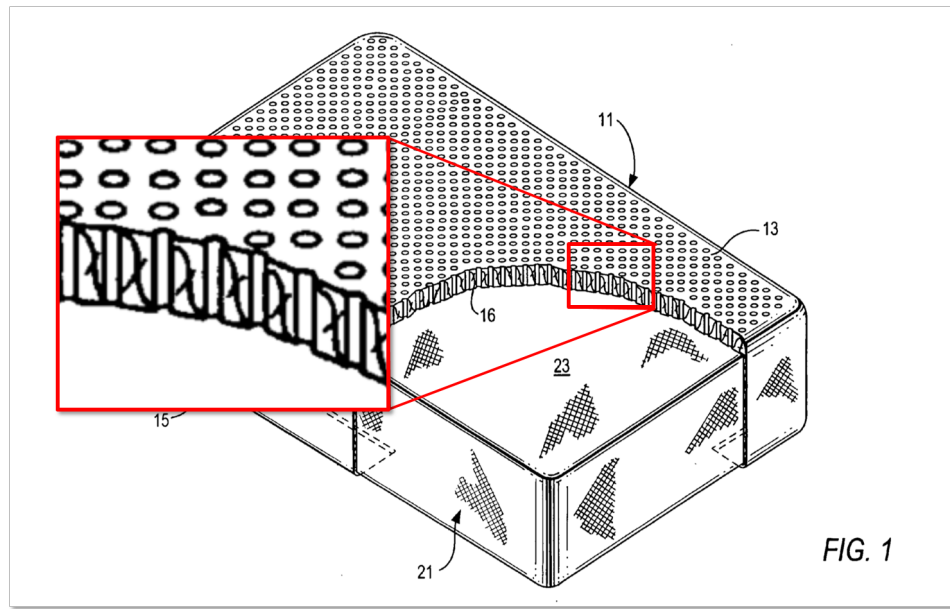
Hoorens (Figs. 1 & 3)



62. Similarly, U.S. Patent Application Publication No. US 2007/0261173 to Schlüssel (Ex. 1009), which was published November 15, 2007, describes the use of a spacer fabric in an infant mattress pad to help prevent SIDS and to provide enhanced comfort. Ex. 1009, Abstract. Specifically, Schlüssel teaches that its “spacer fabric has three parts or components knitted together to form a fabric with two breathable outer fabric layers and a breathable cushioned middle defined by yarns interconnecting the two layers.” *Id.* Schlüssel teaches that “spacer fabric” is also known as “double needle bar fabrics (typically knitted on a double needle bar machine) or 3-dimensional fabric.” *Id.* at [0016]. Schlüssel also teaches that spacer fabric is highly breathable, spacer fabrics and their manufacture are well known in the art, and various types of yarn can be used, such as polyester, nylon, or others. *Id.* The annotated version of Fig. 1 of Schlüssel below shows the

spacer fabric layer 16, with its highly breathable mesh structure, forming the top of its infant mattress pad.

Schlüssel (Fig. 1, annotated)



63. Further, prior to the alleged invention of the '883 Patent, spacer fabrics were being used commercially in mattresses, including for the specific purpose of placing a breathable mesh sidewall made of spacer fabric to facilitate lateral ventilation, and thus cooling. By at least as early as 2006, if not before, spacer fabric was being used commercially by the bedding industry in mattresses to improve breathability. Ex. 1034, Schlenker, "Use of warp-knitted spacer textiles in mattresses," Melliland International, Issue 2, 2006, at pp.125-126. It was known that "[w]ith their exceptional breathability and cushioning that corresponds to the shape of the body, warp-knitted spacer textiles provide a high level of comfort and enable the sleeper to rest and recover by guaranteeing deep, sound and healthy

sleep.” Ex. 1035, “Warp-knitted spacer fabrics for a good night sleep,” Innovation in Textiles, February 22, 2011, <http://www.innovationintextiles.com/warp-knitted-spacer-fabrics-for-a-good-nights-sleep/>, at 5.

64. And, specifically, spacer fabric was also being placed “in lateral strips running around the mattress cover to improve its breathability.” Ex. 1034, at p. 125. Mattresses “with side borders made from thin, warp-knitted spacer textiles having mesh constructions” to provide for lateral ventilation and breathability were known, and an example is shown below. Ex. 1035, at 3-4.



Ex. 1035 at 3-4. Spacer fabrics “with their airy construction” were “said to optimize the sleeping climate and they can be washed and dried easily.” *Id.* at 4.

65. In addition, it was known prior to the alleged invention of the ‘883 Patent that naturally, in addition to being used in mattresses, spacer fabrics could be incorporated into pillows, including for “pillow ticking” and “pillow covers.”

See, e.g., Ex. 1034, Schlenker, at 126 (discussing use of “breathable spacer textiles for providing comfort during sleep” and discussing a company “now using this innovative material in its pillows”); Ex. 1039, Hilleary, at [0036] (discussing use of spacer fabrics “for numerous applications, such as upholstery, mattress and pillow ticking, mattress pads, bed spreads, pillow covers, draperies or cubicle curtains, wall-coverings, window treatments, and the like”). For example, U.S. Patent Application Publication No. US 2008/0209638 to Unger (Ex. 1036), published September 4, 2008, entitled “Method For The Manufacture Of Pillows And Cushions With Spacer Fabric, Spacer Woven Fabric, and Spacer Knitted Fabric,” similarly describes the use of spacer fabric in cushions and pillows. Ex. 1036, at Abstract, [0002]-[0009]; [0072]-[0077]. Unger describes various different spacer fabric structures for use in its pillows and cushions, some of which are shown in figures reproduced below. Further, while many examples given in Unger describe using spacer fabric as fill material for pillows, Unger also teaches that spacer fabric can be used to provide the outer cover of pillows, as well. Ex. 1036 at [0105]-[0106]; [0155].

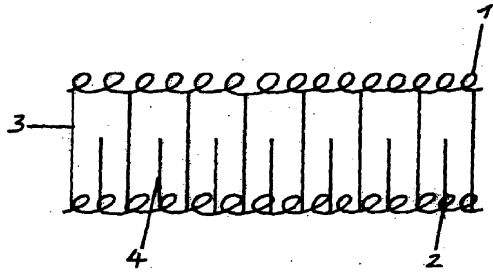


Fig. 1

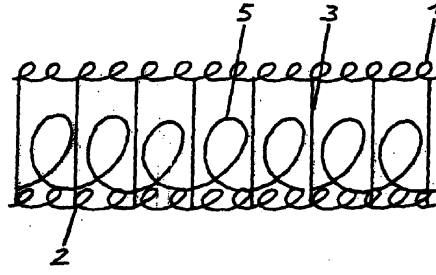


Fig. 2

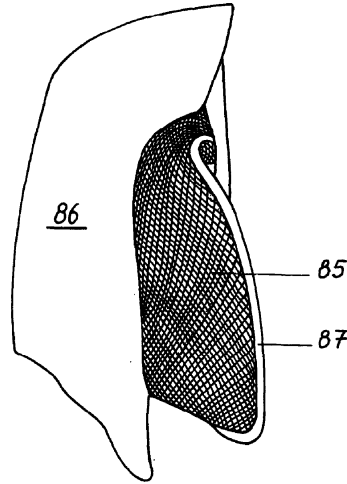


Fig. 17

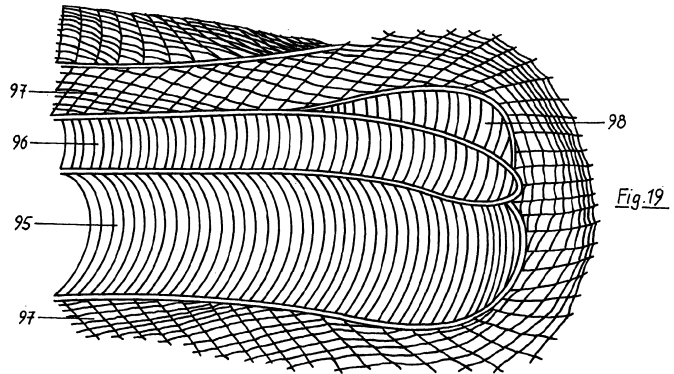
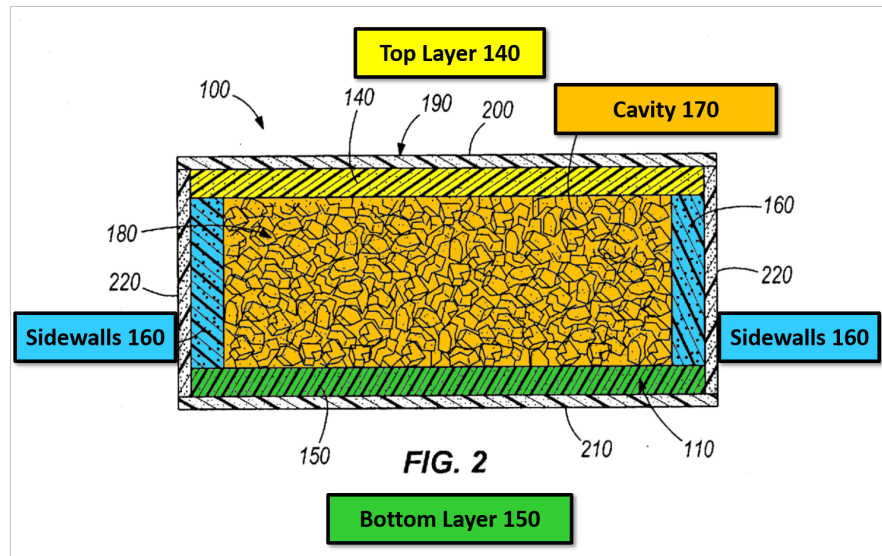
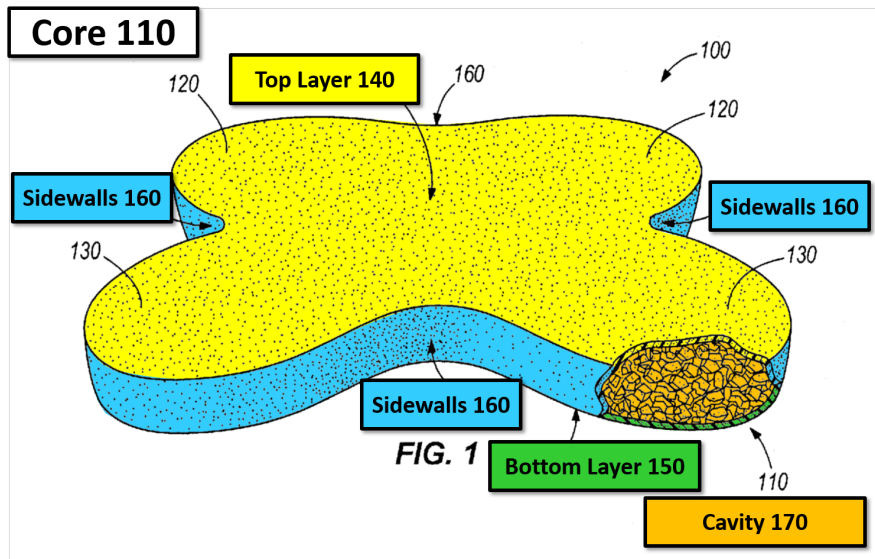


Fig. 19

66. Further, as demonstrated by the Rasmussen reference¹², it was known before the alleged invention of the '883 Patent to use a "highly porous 3D textile material" in the gusset of a pillow to "provide a significant degree of ventilation for the pillow, allowing air to enter and exit the pillow [] readily through the sides of the pillow." Ex. 1006 at [0029], [0049]; Ex. 1007 at [0025], [0045]. Further, Rasmussen teaches that this material for the side portions "can be configured to improve the micro-climate of the pillow [] with respect to humidity and

¹² PCT International Publication No. WO 2010/075294 to Rasmussen ("Rasmussen") (Ex. 1006), which was published on July 1, 2010, filed on December 21, 2009 as International Application No. PCT/US2009/069018 filed, and claims priority to U.S. Provisional Application No. 61/140,622 (Ex. 1007) ("Rasmussen Provisional") filed on December 24, 2008.

temperature.” Ex. 1006 at [0050]; Ex. 1007 at [0046]. Rasmussen’s highly porous gusset, which Rasmussen teaches can be comprised of highly porous 3D textile material, of both the core 110 and optional outer cover 190 are depicted in the color-coded figures below. The gusset of the core 110 is the sidewalls 160, and the gusset of the cover 190 is the side portions 220.

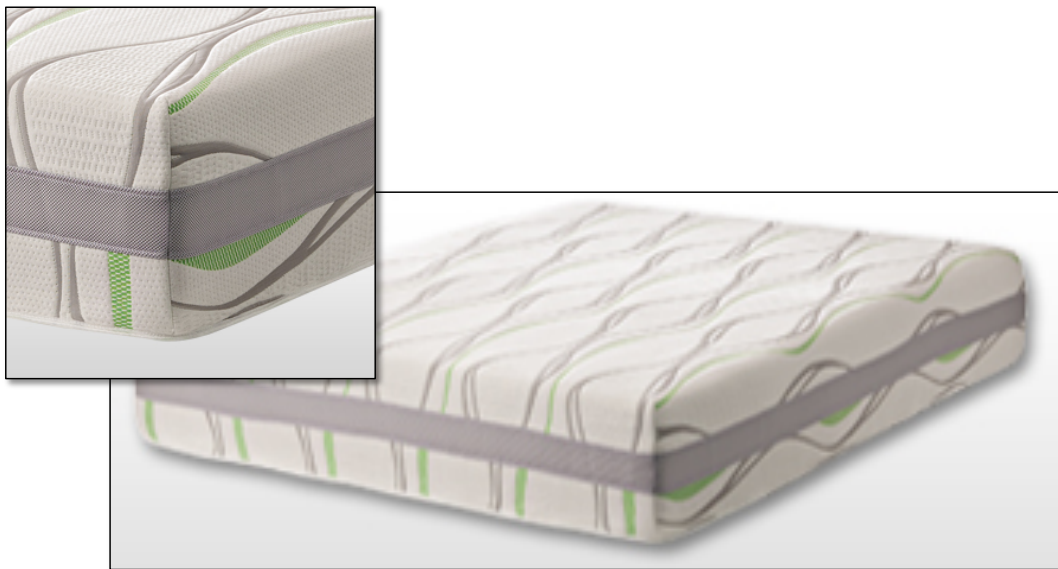


textile suppliers and vendors promoting the use of spacer fabrics for bedding applications to help with air flow, and as a result, temperature management of the sleeping microclimate. All of the ticking mills I met with during this time showed me knit spacer fabrics to be utilized as cover components to increase air flow in the bedding environment. Bodet Horst in North Carolina was showcasing large varieties of spacer fabrics for use in bedding, and Bodet was a key supplier of mattress ticking to Tempur Pedic at the time. By March 2010, QVC PedicSolutions was selling mattress toppers with a 100% polyester spacer fabric component on QVC in the United States, but FXI had developed the product during 2009. From 2010 to 2012, I was continually involved in designing a variety of covers using spacer fabrics from multiple vendors in various ways, and I worked closely with FXI's R&D department on testing in order to quantify air permeability and temperature management claims.

69. FXI began courting Dr. Breus to acquire the Dr. Breus (the Sleep Doctor) pillow brand business and by January 2012, I was personally showing the Dr. Breus team various samples of pillows using spacer fabrics acquired from our various vendors. The final Dr. Breus pillows, which were ordered by June 2012 and shipped by August 2012, were shipped with the covers I designed. One example is the Dr. Breus Breathe Better pillow, shown below, which used spacer fabric on the sides to provide for lateral ventilation and cooling.



70. By February 2012, I had also begun developing a mattress cover that was later shown in July 2012 at the Las Vegas Market furniture trade show and became the Rejuvigel 3 mattress cover. That mattress cover, shown below, similarly utilized spacer fabric in the side panels of the mattress for lateral ventilation and cooling.



71. At the time I was working with spacer fabrics in bedding materials, including placing spacer fabric in the side walls of pillows and mattresses for lateral ventilation and cooling, I never considered such a concept to be new, non-obvious, or inventive, such that it would be worthy of patent protection. I believe such applications of spacer fabrics to be a common sense application of a well known material that was being regularly utilized in the bedding industry. As discussed in detail above in this section, such concepts were already known in the industry and had already been described in numerous prior patents and publications, prior to the alleged invention of the '883 Patent.

C. Level of Skill of a Person Having Ordinary Skill in the Art

72. I was asked to provide my opinion as to the level of skill of a person having ordinary skill in the art of the '883 Patent at the time of the claimed invention. Counsel asked me to consider this issue from the perspective of both the claimed priority date of June 22, 2011, the filing date of the provisional application, as well as the June 22, 2012 filing date of the Parent Application. When I considered both dates, my opinion regarding the level of ordinary skill in the art did not materially differ as between these two dates. In determining the characteristics of a hypothetical person of ordinary skill in the art of the '883 Patent, I was told to consider several factors, including the type of problems encountered in the art, the solutions to those problems, the rapidity with which

innovations are made in the field, the sophistication of the technology, and the education level of active workers in the field at that time. I also placed myself back in the time frame of the claimed invention, and also considered the colleagues with whom I had worked at that time. I also reviewed job requirements for various job postings in the industry and compared them to my knowledge of job requirements for similar jobs back at that time.

73. In my opinion, a person of ordinary skill in the art at the time of the claimed invention (i.e., June 2011 to June 2012) of the '883 Patent would have been a person having at least a bachelor's degree in textile design, textile science, textile engineering or a similar field and at least one year of experience in the design of pillows and other sleep-related textile products; and, in light of the fact that many persons of ordinary skill in this field do not have bachelor's degrees specific to textiles, a person of ordinary skill in the art would, in lieu of such a degree, have at least three to five years of experience in the design of pillows and other sleep-related textile products. Such a person of ordinary skill in the art, as I have defined above, would have been capable of understanding the '883 patent and the prior art references discussed herein.

74. Based on my education, training, and professional experience in the field of the claimed invention, I am familiar with the level and abilities of a person of ordinary skill in the art at the time of the claimed invention. Additionally, I met

at least these minimum qualifications to be a person having ordinary skill in the art at the time of the claimed invention.

D. Claim Construction

75. I have been informed by counsel and understand that the first step in an unpatentability analysis involves construing the claims, as necessary, to determine their scope. And, second, the construed claim language is then compared to the disclosure of the prior art. In proceedings before the United States Patent and Trademark Office, I have been informed that the claims of an unexpired patent are to be given their broadest reasonable interpretation in light of the specification from the perspective of a person of ordinary skill in the art at the time of the invention. I have been informed that the '883 Patent is unexpired.

76. In comparing the claims of the '883 Patent to the prior art, I have carefully considered the '883 Patent and its prosecution history based upon my experience and knowledge in the relevant field. In my opinion, the broadest reasonable interpretation of the claim terms of the '883 Patent is generally consistent with the ordinary and customary meaning of those terms, as one skilled in the relevant field would understand them at the time of the invention. For purposes of this proceeding, I have applied the claim constructions set forth in the claim construction section of the IPR Petition that this declaration accompanies when analyzing the prior art and the claims. For those terms that have not

expressly been construed, I have applied the meaning of the claim terms of the '883 Patent that is generally consistent with the terms' ordinary and customary meaning, as a person of ordinary skill in the art would have understood them at the time of the invention. I was also asked to consider the below discrete claim construction issues.

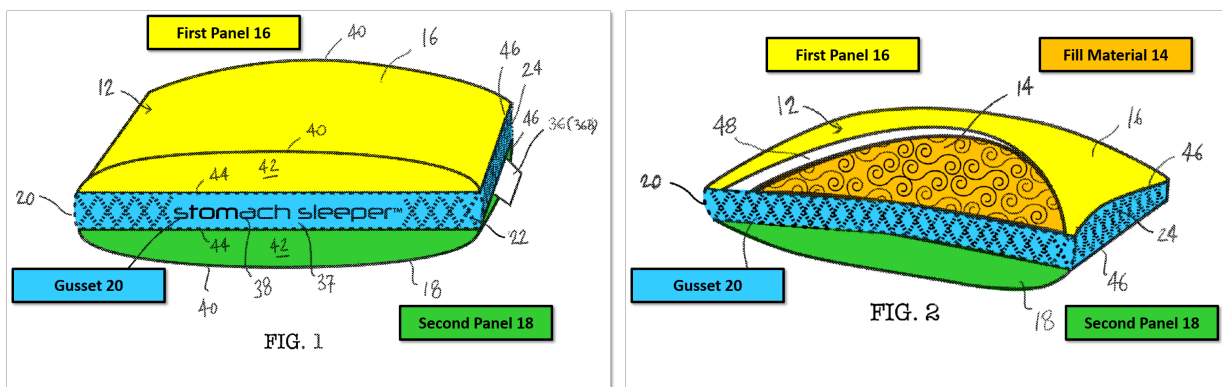
i. "gusset"

77. I was asked to consider how the term "gusset" used in the claims and written description of the '883 Patent would be understood by one of ordinary skill in the art reading the claims and specification at the time of the purported invention of the '883 Patent.

78. A gusset is a well-known term in the broader textile arts, referring generally to a piece of material inserted into a garment (i.e., an item of clothing) for added enlargement/expansion or strength, such as material added at a seam to provide enlargement/expansion or strength. Gussets have long been inserted at seams in garments to provide enlargement or expansion to allow for greater flexibility, comfort, and roominess, as examples. Many dictionary definitions of the term "gusset" are consistent with this traditional usage in the broader textile context. See, e.g., Ex. 1016, New Oxford American Dictionary ("gusset: a piece of material sewn into a garment to strengthen or enlarge a part of it, such as the collar of a shirt or the crotch of an undergarment"); Ex. 1017, American Heritage

Dictionary (“gusset: a triangular insert, as in the seam of a garment, for added strength or expansion”); Ex. 1018, Webster’s New World Dictionary (“gusset: a triangular piece inserted in a garment, etc. to make it stronger or roomier”).

79. While some traditional usages in the garment space limit gussets to being triangular shaped, this is not how the term gusset is used in connection with pillows. This understanding is consistent with the gusset described in the ‘883 Patent. The ‘883 Patent’s “gusset 20” is depicted and described as adding width between the top and bottom panels of the pillow, rather than the top and bottom panels being attached to each other directly, such as in a non-gusseted pillow. Ex. 1001 at 2:5-8 (“...it is preferred that the gusset 20 have sufficient width to separate the first panel 16 from the second panel 18 so as to define an airflow channel therethrough...”). The colored versions of Figs. 1 and 2 below depict “gusset 20” of the ‘883 Patent in blue.



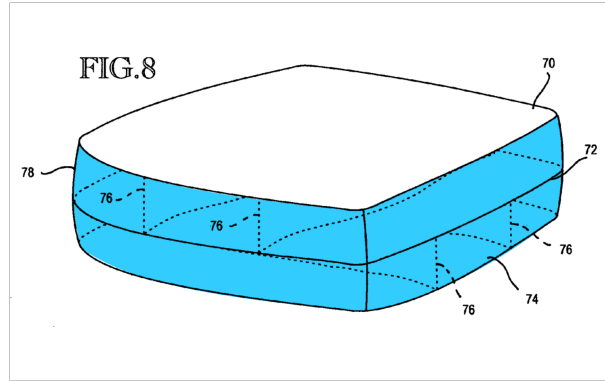
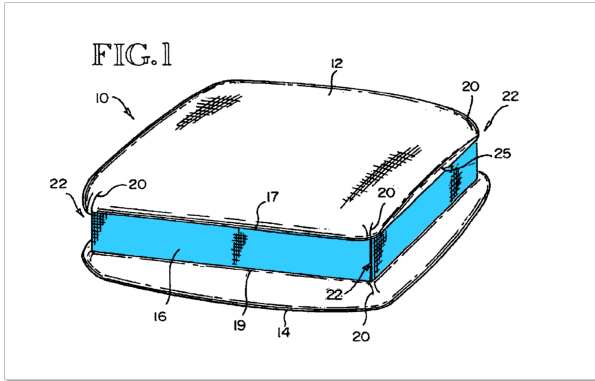
As can be seen, the gusset of the ‘883 Patent is the generally vertical portion (whether a single piece or multiple pieces) that is generally perpendicular to and

between the top and bottom panels of the pillow. The '883 patent uses the term gusset in the context of pillows in the same manner as that term would have been understood and used by a person of ordinary skill in the art in the context of pillows.

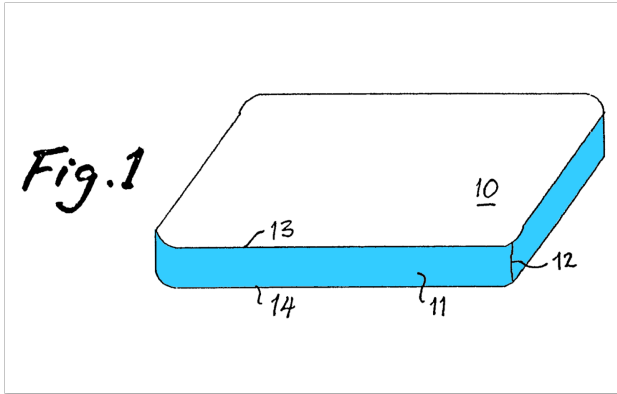
80. This consistent usage is further demonstrated by how the term “gusset” is used by various prior art references, such as the Burton reference, the Delfs reference, and the Starkey reference, which each use the term gusset and were cited by the patent examiner during prosecution of the '883 Patent as containing a gusset. Ex. 1013, Burton, at 1:66-2:2 (“Referring to FIGS. 1 and 2, the high loft pillow shown generally at 10 includes identical top and bottom fabric sections 12 and 14 and an intermediate **gusset** portion 16.”) (emphasis added) & Fig. 1 (below, with gusset highlighted blue); Ex. 1014, Delfs, at 3:54-55 (“A side **gusset** 78 could be included, if desired.”) (emphasis added) & Fig. 8; Ex. 1015, Starkey, at 2 (“[A] box-like pillow is provided by two super-imposed sheets 10 of cover material which, for example, may be 100% cotton cambric, each sewn separately to a shallow **gusset** 11 of a similar material having a single seam 12 at one corner.”) (emphasis added) & Fig. 1.

Burton

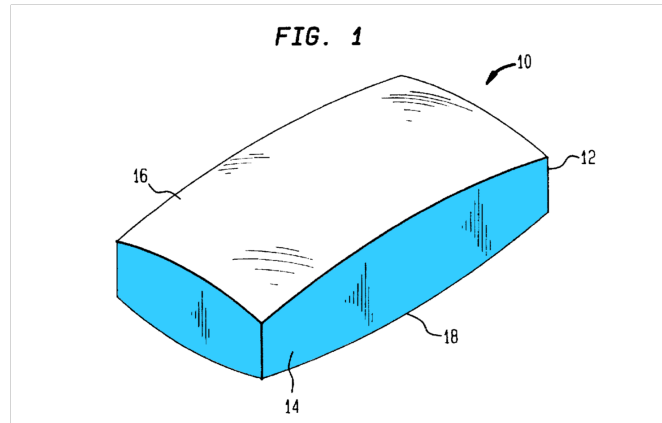
Delfs



Starkey



As another example, prior art reference U.S. Patent No. 5,729,851 to Hollander (Ex. 1019) describes and depicts a gusset in a similar manner. Ex. 1019 at 3:47-51 (“Pillow 10 typically has a conventional essentially rectangular plan profile defined by an outer casing 12 which is formed from a **gusset 14** and opposed sheets or panels of material 16 and 18 joined along peripheral edges to gusset 14 to define an inner cavity 20 therebetween.”) & Fig. 1 (below, with gusset highlighted blue).



81. As can be seen from the '883 Patent, as well as the prior art, the gusset is the generally vertical panel that joins the top and bottom panels and that provides for an enlarged or expanded pillow, rather than joining the top and bottom panels directly. Pillow designers choose to add gussets to add enlargement or expansion (consistent with the dictionary definitions of "gusset" and usage in the broader textile arts) for various reasons. These reasons can be aesthetic, functional, or both. Aesthetically, it can provide the appearance of a higher quality pillow, for example. Functionally, the gusset can provide for an expanded/enlarged pillow to allow for insertion of more fill material to provide higher loft and/or a flatter top surface for better head, neck, and spine alignment of the sleeper, and also to provide space for venting, if desired. Similarly, the gusseted pillows of the '883 Patent are described by the patent as promoting head, neck, and spine alignment, in addition to cooling and airflow, to help encourage a normal sleep cycle. Ex. 1001 at 4:13-18; 2:5-8.

82. Thus, in the context of pillows, a person of ordinary skill in the art at the time would have understood a “gusset” of a pillow to be, consistent with its usage in the ‘883 Patent, a generally vertically-oriented portion of a pillow between the top and bottom panels of a pillow to provide for enlargement or expansion of the pillow.

ii. **“open cell construction”**

83. I was also asked to consider how the term “open cell construction” is used in the claims and written description of the ‘883 Patent from the perspective of a person of ordinary skill in the art reading the claims and specification at the time of the purported invention of the ‘883 Patent.

84. The term “open cell construction” is not used in the ‘883 Patent in the same way that term is used in the industry. “Open cell construction” is a term typically used to describe the structure of viscoelastic foams, i.e., memory foam. “Open cell construction” memory foam is contrasted with “closed cell construction” memory foam. In closed cell foams, the small pockets/bubbles of air, i.e. cells, are typically separate from each other and not interconnected (hence, closed cell). Closed cell foams can be beneficial in some applications in which their strength and water resistant properties are desirable. In bedding, closed cell foams can be problematic due to the amount of heat that they trap, which can lead to discomfort. In open cell foams, the small air bubbles, or cells, are

interconnected to each other through apertured windows surrounded by cell struts—which significantly enhances airflow and thus heat transfer, making these foams breathable and thus cooler, as compared to closed cell foams. Reticulated foams are a special type of open cell foam in which the windows can be entirely or mostly “blown out,” leaving only the skeletal cell strut structure—which makes reticulated foams highly breathable and very cool, but not as dense or structurally supportive.

85. While the ‘883 Patent does not appear to foreclose using an open cell construction viscoelastic foam to form the gusset, the primary examples of the gusset provided are described to be a textile gusset, not a foam gusset. Column 2, lines 20 to 67, of the ‘883 Patent describes that the “open cell construction of the gusset 20 may be defined by various constructions” such as “a plurality of interlaced or spaced-apart strands,” “a base material 30, which is preferably a textile,” having apertures either formed during or after manufacture, or a base material that is “inherently significantly porous” such as “3D spacer fabric.” Ex. 1001 at 2:20-67. Thus, the ‘883 Patent is primarily using “open cell construction” to refer simply to the breathable or porous nature of a textile material—and not to refer to a foam comprised of interconnected, i.e. open, cells. As discussed, this usage is not the conventional usage in the industry. Thus, in the manner used by the ‘883 Patent, I agree with the examiner’s statement during prosecution that, at

least as that term is used by the '883 Patent, the term "open cell construction" is "not an art recognized term that has gained a special meaning or definition in the art." Ex. 1003 at 55-56; Ex. 1002 at 47-49.

86. Regardless, even if the Applicant's definition of "open cell construction" of "a construction having overall porosity greater than the inherent porosity of the constituent material or inherently having high porosity," the prior art cited in the IPR Petition accompanying this declaration and discussed herein for the purpose of disclosing an "open cell construction" as required by certain claims of the '883 Patent nonetheless meets this definition from the perspective of a person of ordinary skill in the art.

E. Priority Date of the '883 Patent Claims

87. I was asked to consider whether the disclosure provided in U.S. Provisional Patent Application No. 61/499,907 ("the Provisional Application") (**Ex. 1004**), filed June 22, 2011, to which the '883 Patent claims priority, provides adequate written description support for the Challenged Claims of the '883 Patent to be entitled to the June 22, 2011 filing date of the provisional application as their priority date. I have applied the legal framework for determining priority, as set forth in Sec. II.C above.

88. In my opinion, the Challenged Claims would not be entitled to the June 22, 2011 filing date of the provisional application as their priority date, because the

provisional application does not, in my opinion, provide adequate written description of the alleged inventions claimed in the Challenged Claims of the ‘883 Patent.

89. I am informed that the written description and figures of the ‘883 Patent are identical to the written description and figures that were filed on June 22, 2012 in U.S. Patent Application No., 13/531,122 (“the Parent Application”), which issued as U.S. Patent No. 8,646,134 (the “‘134 Patent”), to which the ‘883 Patent also claims priority. Thus, I was told to assume, at a minimum, that the ‘883 Patent was entitled to at least a June 22, 2012 priority date. However, the ‘883 Patent would not, in my opinion, be entitled to a priority date of June 22, 2011 based on the filing of the Provisional Application.

90. I first note that the June 22, 2011 Provisional Application is very short, as compared to the written description and figures of the ‘883 Patent. A substantial amount of additional disclosure was provided for the first time in the June 22, 2012 filing of the Parent Application that matured into the ‘134 Patent. As noted, this additional disclosure that was provided for the first time on June 22, 2012 is identical to the disclosure contained in the ‘332 Patent. Thus, as noted above, for the sake of simplicity, I will refer and cite to the written description and figures of the ‘332 Patent for comparison purposes.

91. With respect to the purported point of novelty of the '883 Patent, i.e., the use of porous first and second panels to allow air to enter the inner cavity of a pillow defined by first and second panels joined by a gusset and the use of pores in the gusset to allow air to exit the interior of the pillow, the Provisional Application discloses little more detail than that "[a] 2" Mesh gusset sidewall helps form pillow shape for open airflow." Ex. 1004 at [007]. And when describing the drawings, the provisional merely refers repeatedly to element 3 of the figures as "3 mesh gusset sidewall for open airflow." Ex. 1004 at [0016]-[0019]. Thus, the Provisional Application provides very little detail regarding the purported novel aspect of the pillow. In addition, the figures of the Provisional Application are labeled with far fewer elements and have very little corresponding description, as compared to the description provided in the Parent Application. The below comparison between Fig. 1 of the Provisional Application and Fig. 1 of the '883 Patent illustrates this fact:

Fig. 1 of Provisional:

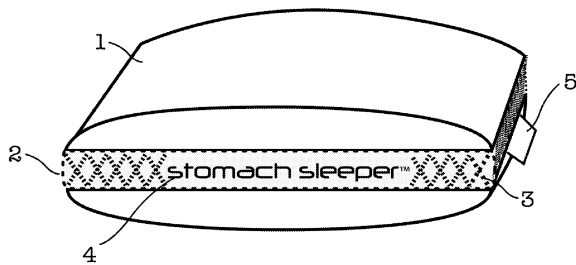


FIG. 1

Fig. 1 of '883:

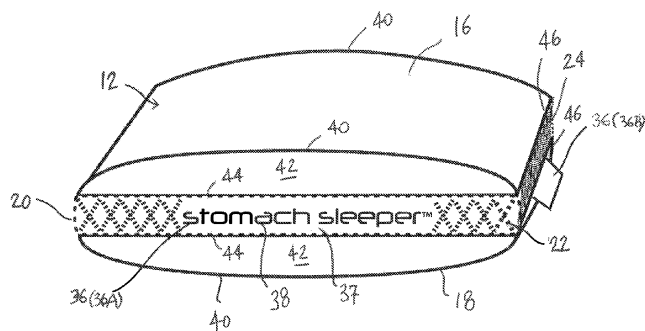


FIG. 1

92. Below I have analyzed each of the Challenged Claims claim by claim to determine whether the provisional provided adequate written description support (under the legal standard discussed above) for each of the respective claims from the perspective of a person of ordinary skill in the art at the time of the invention.

93. Regarding claim 1 of the '883 Patent (and all other claims of the '883 Patent, which depend directly or indirectly from claim 1), in my opinion, a person of ordinary skill would not have understood from the Provisional Application that the inventor was in possession of the claimed invention. First, the Provisional Application does not provide written description for the limitation "wherein inner surfaces of said first panel, said second panel and said gusset define an inner cavity; and said pillow is configured to have air enter the cavity through pores in the first and second panels and have the air exit the cavity through pores in the gusset." The written description for this limitation was not disclosed in the Provisional Application and was first disclosed, along with a substantial amount of other new matter, in the Parent Application (which shares a written description with the '883 Patent). The Provisional is silent as to the direction of airflow through the pillow and is silent as to the existence of pores in any first and second panels.

94. The subject of the direction of airflow entering through pores in the first and second panels and exiting through the gusset was not disclosed (and only

arguably was it even then disclosed) until the June 22, 2012 filing of the Parent Application. Ex. 1001, at 2:10-13 (“With pressure and/or heat applied to one or both of the first and second panels 16, 18, the gusset 20 provides venting therethrough of the interior of the cover 12”); Ex. 1003 at 99. Similarly, the subjects of the pores of the first and second panels and the pores of the gusset were also not disclosed until the filing of the Parent Application. Ex. 1001 at 2:55-60 (disclosing that “the gusset 20 may be formed with the base material 30” and “[t]he porosity of the base material 30 may be substantially greater than the porosity of the material forming the first panel 16 and/or substantially greater than the porosity of the material forming the second panel 18”). This disclosure of porosities and relative porosities as between the gusset and the first and second panels was not contained in the Provisional Application.

95. In fact, the Provisional Application does not even describe that its outer fabric cover is comprised of separate first and second panels that are joined by the gusset or that the first panel, second panel, and gusset define an inner cavity, as also claimed in claim 1. Instead, the Provisional Application generically discloses a “fabric cover” that it labels as a single element “1” and depicts as a single element in Figs. 1-4. Ex. 1004 at [005]-[006], [0016]-[0019], Figs. 1-4. The figures and written description of the Provisional Application do not teach that the fabric cover is comprised of separate panels, nor do they specify how the “Mesh

gusset sidewall” is attached, what it joins/connects, how it “helps form pillow shape,” or that any inner cavity is defined by a first panel, second panel, and gusset. *Id.* This provides an additional reason why both the requirement of air entering through pores in the first and second panels and existing through pores in the gusset, as well as the requirement of the first panel, second panel, and gusset defining an inner cavity of claims 1-20 is not adequately described in the Provisional to a person of ordinary skill in the art. Even if the Provisional taught the direction of airflow through the pillow, it does not teach separate first and second panels and thus cannot teach that air flows in through pores in the first and second panels. And, as discussed, it also does not teach that a first panel, second panel, and gusset define an inner cavity.

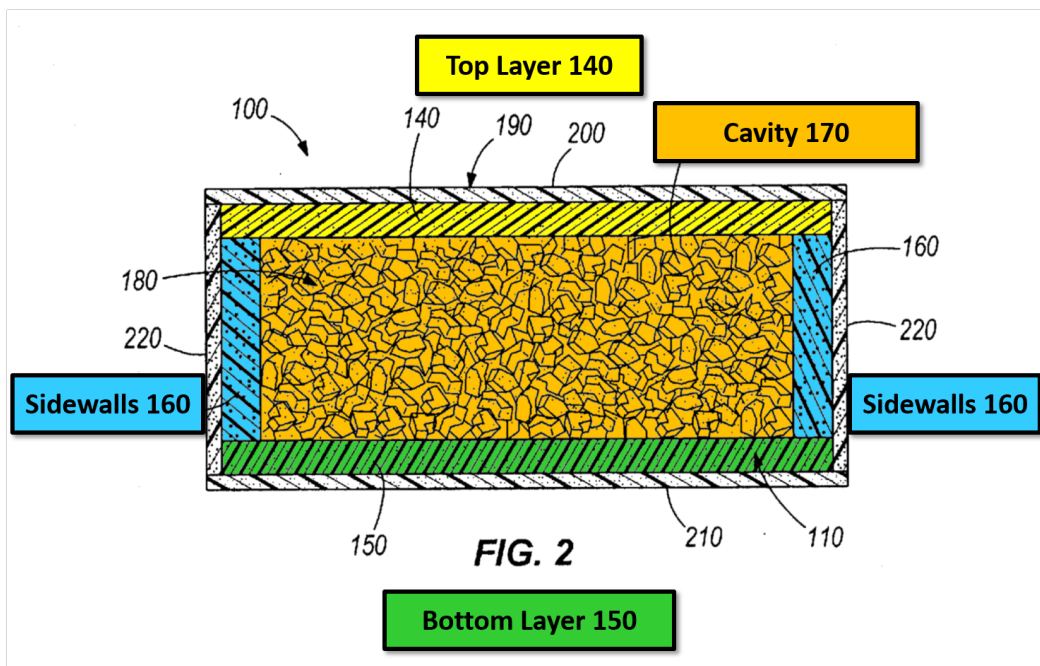
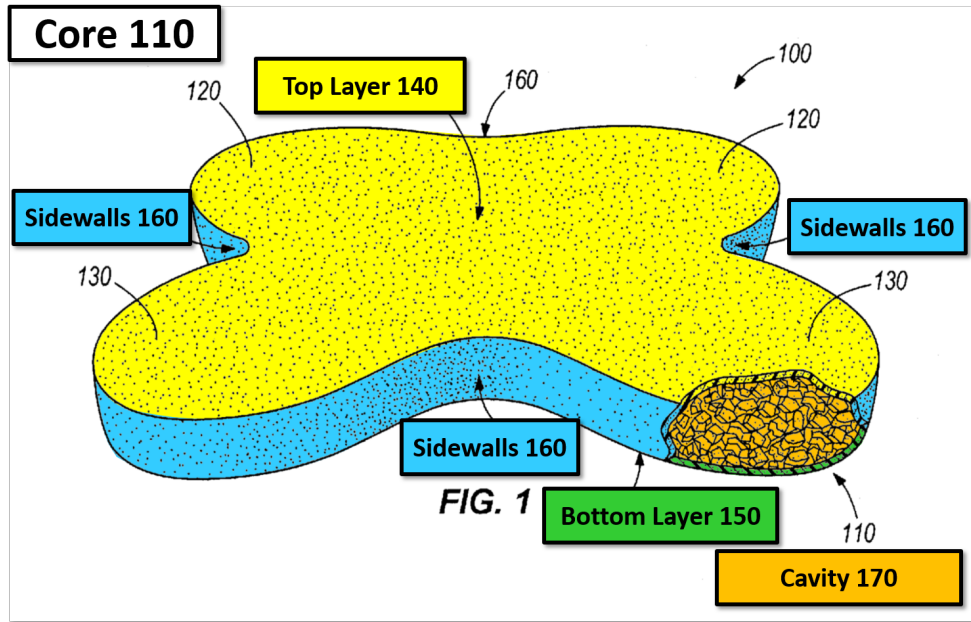
96. A person of ordinary skill in the art would, therefore, not have understood from the brief disclosure in the Provisional Application that the inventor was in possession of the inventions of claims 1-20, for at least these reasons, at a minimum.

F. Opinions Regarding Rasmussen

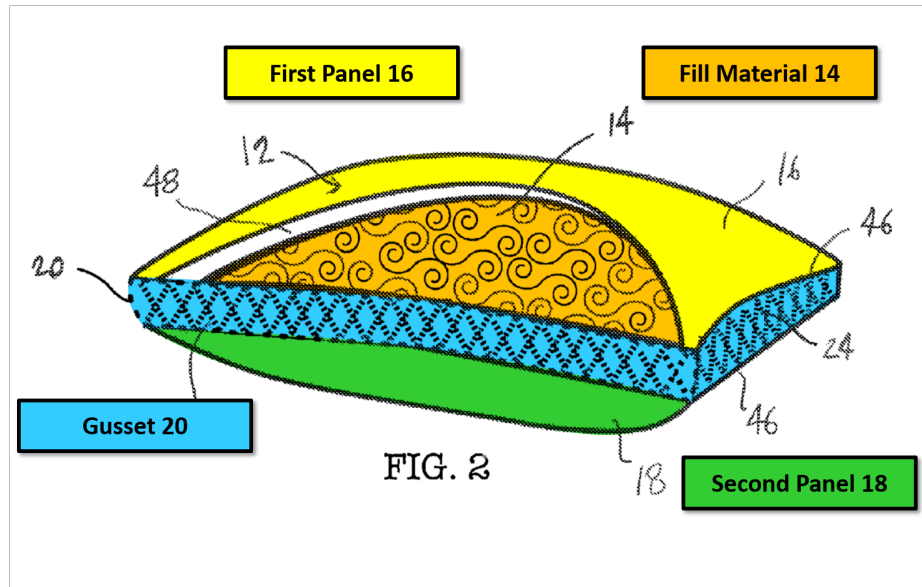
97. I have reviewed the Rasmussen reference (EX. 1006), including the Rasmussen Provisional (Ex. 1007). In my opinion, from the perspective of a person of ordinary skill in the art, Rasmussen teaches the allegedly novel feature of the ‘883 Patent through Rasmussen’s teaching of a highly porous gusset

(comprised of a highly porous 3D textile material or highly porous velour or stretch velour material) that bounds and joins a top panel and bottom panel of a pillow to provide for enhanced lateral ventilation and cooling. In my opinion, Rasmussen teaches this concept through the teachings of the structure and components of its “core 110” and also, additionally and separately, through the teachings of the structure and components of its “cover 190” for its embodiments that include the outer cover 190.

98. The components of Rasmussen’s core 110, including its top layer 140 and bottom layer 150, which are bounded and joined by the sidewalls 160, are shown in the color-coded and labeled versions of Figs. 1 (perspective view) and 2 (cross-sectional view) of Rasmussen below. Together, the top layer 140, bottom layer 150, and sidewalls 160 define an inner cavity 170 that includes fill material 180. Ex. 1006 at [0015] & Figs. 1-2; Ex. 1007 at [0016] & Figs. 1-2.



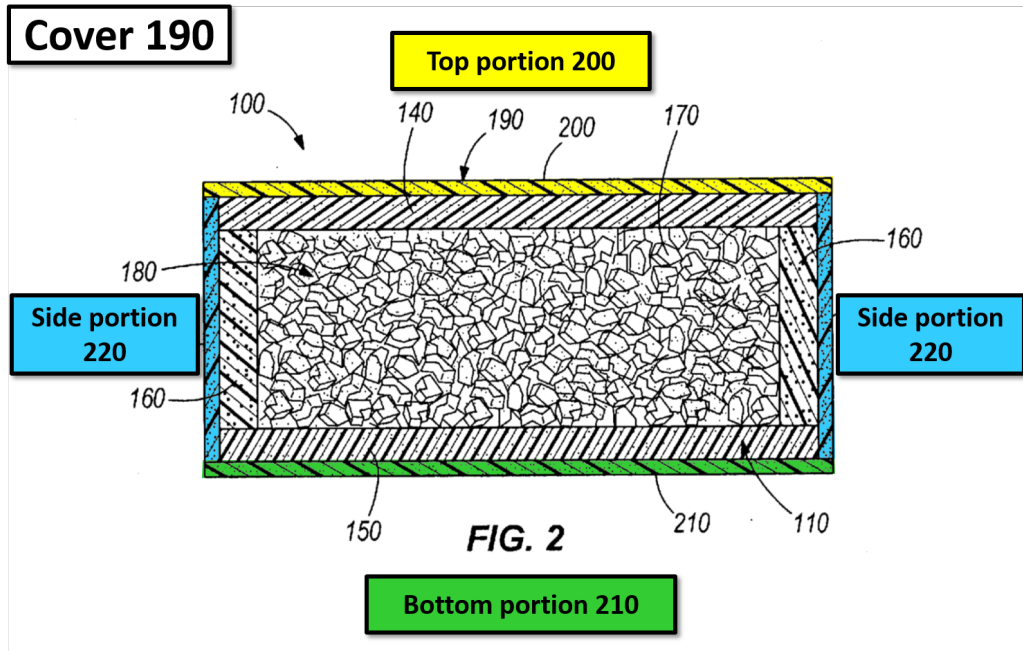
99. As can be seen, the colored components from Rasmussen correspond to the colored components of the pillow depicted in the '883 Patent (shown below), with the first (top) panel colored yellow, second (bottom) panel colored green, gusset colored blue, and cavity containing filler material colored orange.



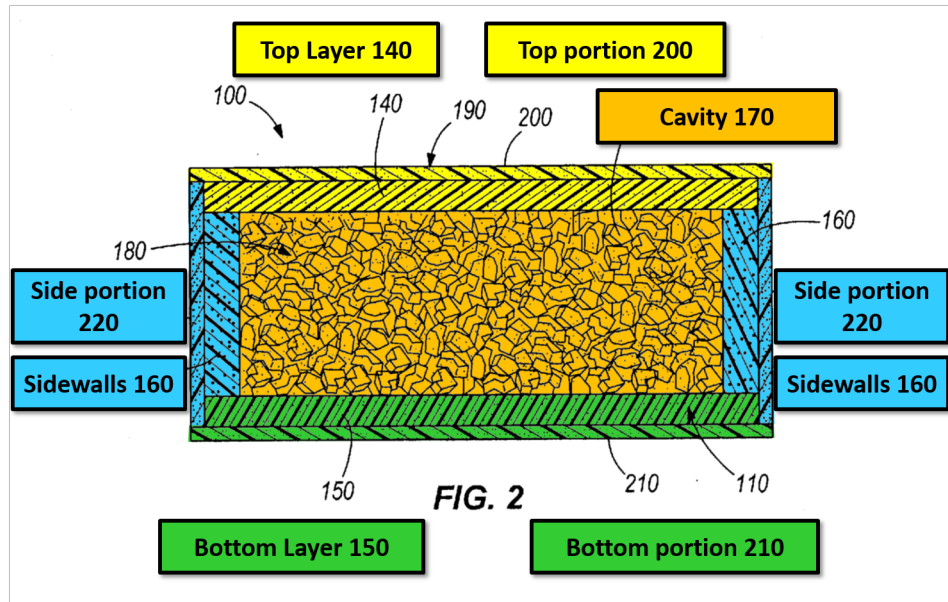
100. With respect to its core 110, Rasmussen teaches that its gusset, i.e., sidewalls 160, are “highly porous, and therefore provide a significant degree of ventilation for the pillow, allowing air to enter and exit the pillow 100 readily through the sides of the pillow. The inventors have discovered that this capability is achieved through use of a 3D textile core sidewall 160, which has the added benefit of providing structural strength to the pillow 100 to retain the box-shaped core structure described above.” Ex. 1006 at [0029]; Ex. 1007 at [0025]. Rasmussen also teaches that “[a]s alternatives to the 3D textile material, other breathable fabric can instead be used as desired.” *Id.*

101. Rasmussen also teaches that its pillow 100 can optionally also have an outer cover (cover 190) that substantially encloses the core 110 of the pillow. Ex. 1006 at [0048]; Ex. 1007 at [0044]; Fig. 2. Rasmussen’s Figure 2, shown below with color coding, depicts the cover 190, which “can include a top portion 200, a

bottom portion 210 opposite the top portion 200, and side portions 220 extending between the top portion 200 and the bottom portion 210.” *Id.*



102. These components of the cover 190 lie adjacent to and correspond to the components of the core 110. *Id.* This is illustrated in the colored version of Figure 2 below which shows the corresponding components of each of the core 110 and cover 190.



103. Like for the core 110, the cover 190 also uses side portions that are made of a highly porous material to provide for lateral ventilation and cooling. Ex. 1006 at [0049] (“The side portions 220 of the cover 190 can be highly porous (e.g., made of a 3D textile material or a velour or stretch velour material), corresponding to and covering the highly porous material of the core sidewalls 160. . . . Accordingly, the side portions 220 of the cover 190 . . . can permit significant ventilation into and out of the pillow.”); Ex. 1007 at [0045]; Ex. 1006 at [0050].

104. Rasmussen also specifically teaches that the top portion 200 and bottom portion 210 of the cover 190 can be made of the “same materials,” such as “a double jersey fabric, velour, or stretch velour” and can be “both less porous than the side portions 220 of the cover 190.” Ex. 1006 at [0050]; Ex. 1007 at [0046]. Rasmussen teaches that velour and stretch velour are examples of porous materials. Ex. 1006 at [0049]; Ex. 1007 at [0045]. Velour and stretch velour are well known

fabrics that are typically knitted and known to skilled artisans to be breathable/porous to allow airflow. A person of ordinary skill in the art would have understood from the teachings of Rasmussen, as well as their own knowledge and experience, that the same material can be used for the top portion and bottom portion of the cover 190 and that this material is porous, allowing air to enter and exit through these portions, albeit at a relatively lower rate than the more porous side portions. Rasmussen also teaches a person of ordinary skill in the art that by being relatively more porous than the top portion and bottom portion, the side portions “can be configured to improve the micro-climate of the pillow 100 with respect to humidity and temperature.” Ex. 1006 at [0050]; Ex. 1007 at [0046].

105. Rasmussen, therefore, demonstrates, with respect to both its core 110 and its cover 190, separately and independently, that the use of a highly porous gusset joining and bounding breathable/porous top and bottom panels of a pillow to provide for lateral ventilation and cooling was already known in the prior art and was not new or non-obvious as of the time of the alleged invention of the ‘883 Patent.

i. Claim 1

106. I was asked to provide my opinion on whether Rasmussen’s “core 110” and “cover 190” disclosed each of the limitations of claim 1. It is my opinion that it does with respect to each, separate and independent of each other.

Rasmussen's core 110 includes a top layer 140, which would be understood to be a first panel having an edge defining a perimeter, a bottom layer 150, which would be understood to be a second panel having an edge defining a perimeter, and sidewalls 160, which would be understood to be a gusset (as explained further below) joining said first and second panels. Ex. 1006 at Figs. 1-2, [0015]; Ex. 1007 at Figs. 1-2, [0011]. Rasmussen's cover 190 includes a top portion 200, which would be understood to be a first panel having an edge defining a perimeter, a bottom portion 210, which would be understood to be a second panel having an edge defining a perimeter, and side portions 220, which would be understood to be a gusset (as explained further below) joining said first and second panels. Ex. 1006 at Figs. 1-2, [0048]; Ex. 1007 at Figs. 1-2, [0044].

107. I was asked to provide my opinion on whether Rasmussen's "core 110" and Rasmussen's "cover 190" disclosed the "gusset" required by claim 1 and also required by independent claim 1 of the '883 Patent. It is my opinion that it does with respect to both Rasmussen's core 110 and Rasmussen's cover 190, separately and independently. For the core 110, the sidewalls 160 are a "gusset" as that term has been construed above and as that term would be understood in the '883 Patent—that is, the sidewalls are a generally vertically oriented portion between the top and bottom panels of the pillow that provide for enlargement or expansion of the pillow, rather than the top layer 140 and bottom layer 150 being

connected directly. For the cover 190, the side portion 220 is a “gusset” as that term has been construed above and as that term would be understood in the ‘883 Patent—that is, the side portion 220 is a generally vertically oriented portion between the top and bottom panels of the pillow that provides for enlargement or expansion of the pillow, rather than the top portion 200 and bottom portion 210 being connected directly.

108. I was asked to provide my opinion on whether Rasmussen’s “core 110” and Rasmussen’s “cover 190” disclosed claim 1’s limitation of “wherein inner surfaces of said first panel, said second panel and said gusset define an inner cavity; and said pillow is configured to have air enter the cavity through pores in the first and second panels and have the air exit the cavity through pores in the gusset.” It is my opinion that it does with respect to both Rasmussen’s core 110 and Rasmussen’s cover 190, separately and independently.

109. With respect to “core 110,” Rasmussen teaches the inner surfaces of the first panel, second panel, and gusset define an inner cavity, because Rasmussen teaches that “[t]he top layer 140, bottom layer 150, and sidewalls 160 define a cavity 170 shaped to receive filler material 180.” Ex. 1006 at [0015], Figs. 1-2; Ex. 1007 at [0011], Figs. 1-2. Rasmussen expressly teaches that the top layer 140, i.e. the first panel, and bottom layer 150, i.e. the second panel, of the core 110 can both be comprised of reticulated visco-elastic foam to “enable[] significantly

higher airflow into, out of, and through the top layer 140 and bottom layer 150 - a characteristic of the top layer 140 and bottom layer 150 that can reduce heat in the respective layer.” Ex. 1006 at [0024]; Ex. 1007 at [0020]. Similarly, Rasmussen teaches that “reticulated foam can provide significantly increased ventilation for the top and/or bottom layer 140, 150 of the pillow 100, thereby enhancing the ability of the pillow 100 to transport heat away from the user’s body thereon.” Ex. 1006 at [0022]; Ex. 1007 at [18]. A person of ordinary skill in the art would understand from these teachings that the first panel (top layer 140) and second panel (bottom layer 150) have pores that allow air to enter the inner cavity (cavity 170) defined by the first panel, the second panel, and the gusset (sidewalls 160). Rasmussen actually describes these pores when describing the skeletal nature of the reticulated foam, which has open cell struts that allow the air to pass through the foam panels. Ex. 1006 at [0023-0025]; Ex. 1007 at [0019-0021]. Rasmussen also teaches that the sidewalls 160, i.e. the gusset, “are highly porous, and therefore provide a significant degree of ventilation for the pillow, allowing air to enter and exit the pillow 100 readily through the sides of the pillow 100.” Ex. 1006 at [0029]; Ex. 1007 at [0025]. A person of ordinary skill in the art would understand that Rasmussen’s core’s gusset (sidewalls 160) has pores that allow air to exit the inner cavity formed by the first panel, second panel, and gusset. These teachings confirm what a person of ordinary skill in the art would understand from

the structures described and thus confirm that claim 1 is anticipated by Rasmussen's core 110.

110. I note that claim 1 recites “said pillow is configured to have air enter the cavity through pores in the first and second panels and have the air exit the cavity through pores in the gusset,” and a person of ordinary skill in the art would not understand this language to require that air only be allowed to enter through pores in the first and second panels and only exit through pores in the gusset. The ‘883 Patent does not purport to have invented some type of one-way pore that would only allow air to flow in one direction. A person of ordinary skill in the art would understand that the claimed pores (in the first and second panels, as well as in the gusset) would be able to allow air to both enter and exit the inner cavity formed by the inner surfaces of the first panel, second panel, and gusset. Rasmussen's “cover 190” also separately and independently satisfies claim 1's limitation of “wherein inner surfaces of said first panel, said second panel and said gusset define an inner cavity; and said pillow is configured to have air enter the cavity through pores in the first and second panels and have the air exit the cavity through pores in the gusset.”

111. Rasmussen teaches that cover 190 has components that correspond to and lie adjacent to the components of the core 110—specifically, the cover 190 includes “a top portion 200, a bottom portion 210 opposite the top portion 200, and

side portions 220 extending between the top portion 200 and the bottom portion 210.” Ex. 1006 at [0048], Fig. 2; Ex. 1007 at [0044], Fig. 2. A person of ordinary skill in the art would understand from these teachings as well as from Fig. 2 that the inner surfaces of the first panel (top portion 200), the second panel (bottom portion 210), and the gusset (side portions 220) define an inner cavity. Further, Rasmussen teaches that the top portion 200 and bottom portion 210 of the cover 190 can be made of the “same materials,” such as “a double jersey fabric, velour, or stretch velour” and can be “both less porous than the side portions 220 of the cover 190.” Ex. 1006 at [0050]; Ex. 1007 at [0046]. Rasmussen teaches that velour and stretch velour are examples of porous materials (Ex. 1006 at [0049]; Ex. 1007 at [0045]), and velour and stretch velour are well known fabrics that are typically knitted and known to skilled artisans to be breathable/porous, consistent with the teachings of Rasmussen. A person of ordinary skill in the art, therefore, would understand Rasmussen to be teaching that its top portion 200 (first panel) and bottom portion 210 (second panel) have pores that allow air to enter the inner cavity defined by the first panel, second panel, and gusset (side portions 220).

112. Rasmussen also expressly teaches that, in its cover 190, the first panel, i.e. top portion 200, and the second panel, i.e. bottom portion 210, can both be less porous than the side portions 220. Ex. 1006 at [0050] (“[T]he top portion 200 and bottom portion 210 of the cover 190 are less porous than the side portions 220 of

the cover 190.”), Fig. 2; Ex. 1007 at [0046], Fig. 2. Similar to the core 110, Rasmussen teaches that the outer cover 190 can utilize “highly porous” “3D textile material” for its side portions 220 and “[a]ccordingly, the side portions 220 can permit significant ventilation into and out of the pillow.” Ex. 1006 at [0049]; Ex. 1007 at [0045]. By permitting significant ventilation through the highly porous 3D textile side portions of the cover relative to the relatively less porous top and bottom portions, Rasmussen teaches that “[a]ccordingly, the material for the side portions 220 . . . can be configured to improve the micro-climate of the pillow 100 with respect to humidity and temperature.” Ex. 1006 at [0050]; Ex. 1007 at [0046]. It is consistent with the understanding of a person of ordinary skill in the art that use of a highly porous 3D textile for the gusset of the cover and use of a porous fabric, such as a velour, for the top and bottom panels of the cover would result in a gusset that has greater porosity/breathability than the top and bottom panels. A person of ordinary skill in the art would understand Rasmussen to be teaching that its gusset has pores to allow air to exit the inner cavity defined by the top panel, bottom panel, and gusset. Rasmussen, therefore, anticipates claim 1 with respect to both its core 110 and cover 190.

113. It is my opinion that Rasmussen anticipates claim 1. However, I was also asked to provide my opinion as to whether based on the legal factors discussed above for a determination of obviousness (including, e.g., the scope and content of

the prior art, the differences between the prior art and the claims at issue, the level of skill in the pertinent art, and any secondary considerations of non-obviousness), claim 1 would have also been obvious to a person of ordinary skill in the art based on Rasmussen. It is my opinion that it would have indeed been obvious. I can discern no meaningful distinction between the requirements of claim 1 and the teachings of Rasmussen. As discussed above in Section IV.B, pillows using porous top and bottom panels have long been well known, porous side vents for pillows to provide for lateral ventilation have long been well known, the basic structure of a gusseted pillow having opposing top and bottom panels joined by a perimeteric gusset has long been well known, it was known at least since 1960 to place vents into the gusset of such a pillow for lateral ventilation, it was known to place mesh vents, including 3D spacer fabric vents, into the sides of mattresses and cushions, to provide for lateral ventilation and cooling prior to the alleged '883 invention, and it was known prior to the alleged '883 invention to place 3D spacer fabric on pillow covers. A person of ordinary skill in the art, in light of this background of knowledge and prior art, reading the Rasmussen disclosure would have readily arrived at claim 1 without undue experimentation and with expected results. A person of ordinary skill in the art would have also been motivated to and had reason to arrive at the invention of claim 1 based on Rasmussen, because it was well known that it was desirable to utilize porous materials in the top and

bottom panels of a pillow, as well as in the gusset, so as to provide a cooler and more comfortable sleeping environment—and Rasmussen acknowledges that it was desirable to obtain such characteristics in pillows. It was also known to provide such airflow to prevent uncomfortable “ballooning” in pillows, such as can be caused from air becoming trapped inside.¹⁴ I am aware of no “secondary considerations” set forth in the list provided above in Section III.B that would suggest claim 1 was non-obvious. On the contrary, the consideration of “lack of independent simultaneous invention within a comparatively short space of time” suggests claim 1 was obvious. As I discussed above at the end of Section IV.B, I was personally working on pillows and mattresses having porous top and bottom panels to allow airflow and having 3D spacer fabric sides to provide for lateral ventilation and cooling in the same timeframe as the alleged invention of the ‘883 Patent, and I never viewed the concept as inventive or proprietary. Instead, to me, it was an application of ordinary skill and common sense arising from the known applications of spacer fabrics in bedding and the known desire to provide for ventilation in bedding products, especially those utilizing memory foam, which has a known tendency to accumulate heat, which can decrease comfort. Thus, in my opinion, claim 1 is also obvious in light of Rasmussen.

¹⁴ See, for example, U.S. Patent No. 8,561,233 to Navan (filed Sept. 15, 2008) at 3:5-9, for a discussion of pillow ballooning leading to discomfort.

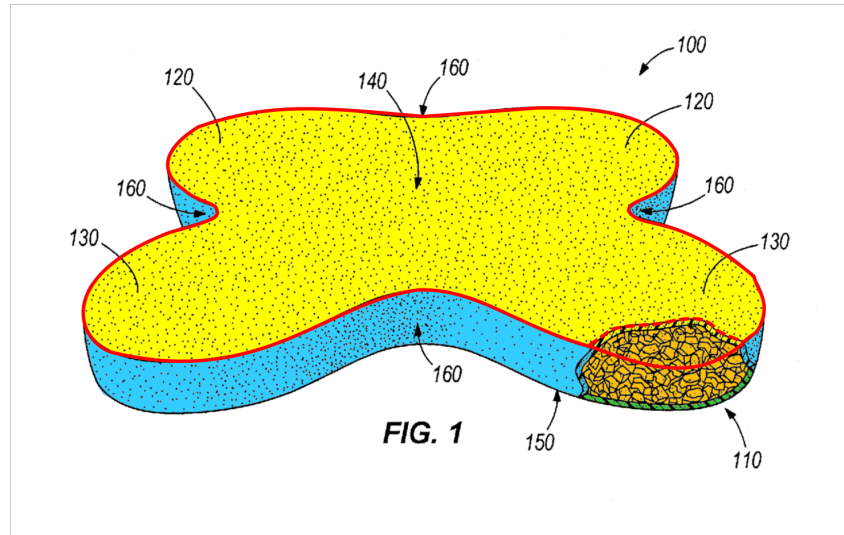
ii. Claims 2-3

114. I was asked to consider whether Rasmussen teaches all of the limitations of claims 2-3. It is my opinion that it does with respect to both Rasmussen's core and cover. Claim 2 requires "[a] pillow as recited in claim 1, wherein: a first end of said gusset engages said edge of said first panel such that said gusset extends continuously about an entire portion of the perimeter of the first panel; and a second end of said gusset opposite said first end engages said edge of said second panel such that said gusset extends continuously about an entire portion of the perimeter of the second panel."¹⁵ Claim 3 requires "[a] pillow as recited in claim 1, wherein said gusset perimetrically bounds said first and second panels." Rasmussen's core and cover separately teach each of these limitations of claims 2-3.

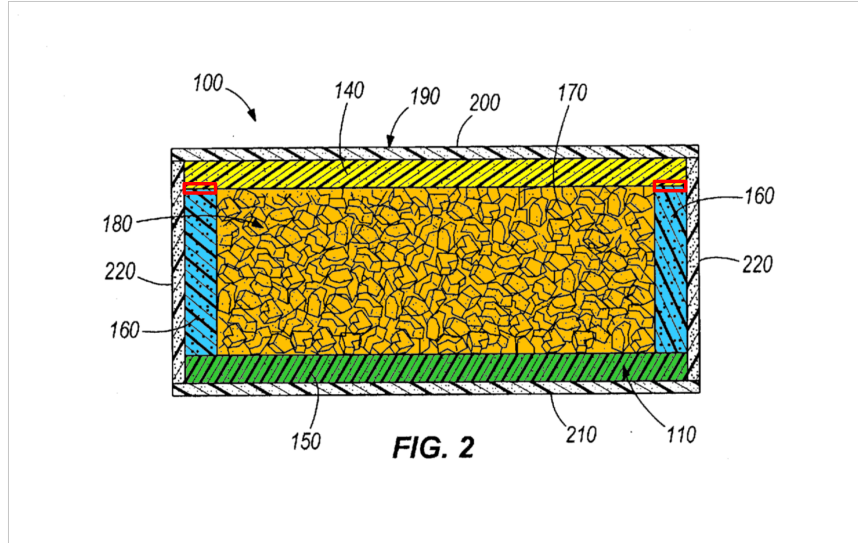
115. In Rasmussen's core, the top edge of the gusset, i.e. sidewall 160, constitutes the claimed "first end of said gusset" that engages the edge of the first panel, i.e., top layer 140, along its perimeter. The sidewall 160 extends

¹⁵ I note that a person of ordinary skill in the art reading the '883 Patent would not understand the language "said gusset extends continuously about an entire portion of the perimeter" to require the gusset be a single continuous piece of fabric with no seam. The '883 Patent teaches that its "gusset 20 is provided as four contiguous portions, including two longer longitudinal portions 22 joined by two shorter end portions 24." Ex. 1001, 2:17-19. Further, the claim language says the gusset extends continuously "about an entire portion of the perimeter," and not "about the entire perimeter." This would be consistent with the understanding of a skilled artisan in this field, given that perimetric gussets typically have at least one seam (even though its possible to manufacture a continuous strip, though it would be more involved). See, e.g., Ex. 1015, Starkey, at 2 (describing that the gusset 11 has "a single seam 12 at one corner"), Fig. 1.

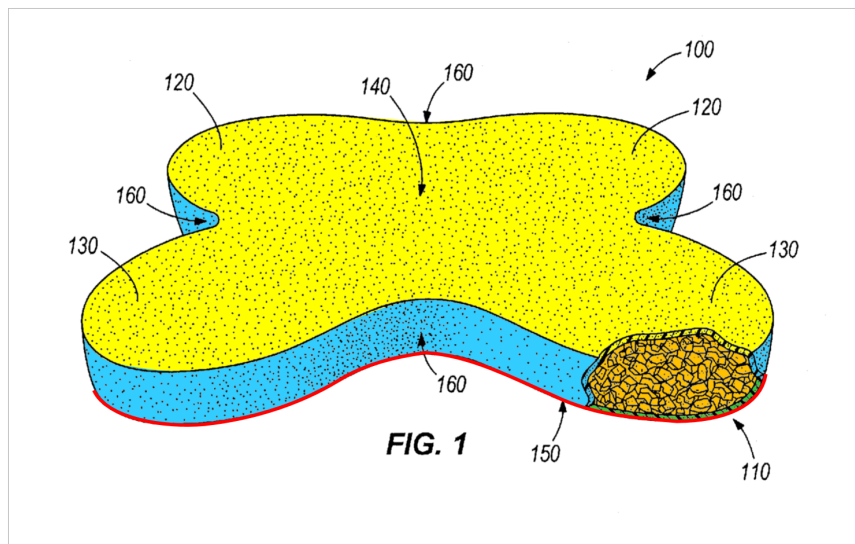
continuously about an entire portion of this perimeter. This is shown in the red highlighting added to Fig. 1 below.



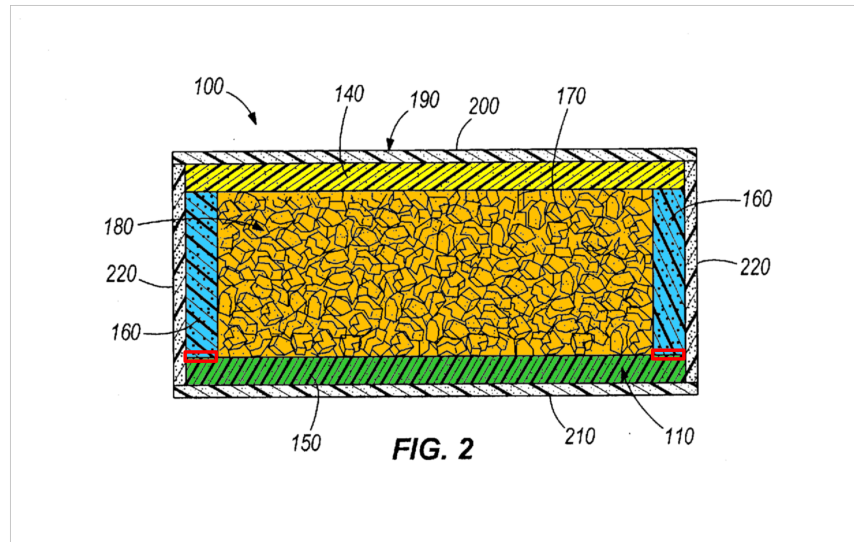
Although this perspective view does not show the back sides of the pillow, a person of ordinary skill in the art would understand from the figures and from the description of Rasmussen, that if the pillow were turned, one could see where the top edge of the sidewall 160 engages and joins the peripheral edge of the top layer 140. This boundary where sidewall 160 engages and joins the peripheral edge of the top layer 140 is also highlighted red in the cross sectional view provided in Fig. 2 below.



Further, the bottom edge of the gusset, i.e. sidewall 160, constitutes the claimed “second end of said gusset opposite said first edge” that engages the edge of the second panel, i.e., bottom layer 150, along its perimeter. The sidewall 160 extends continuously about an entire portion of this perimeter. This is shown in the red highlighting added to Fig. 1 below.



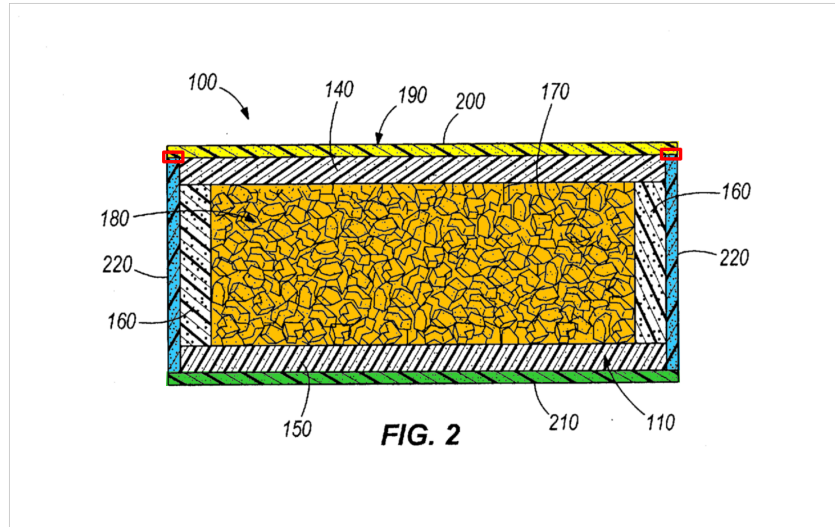
Although this perspective view does not show the back sides of the pillow, a person of ordinary skill in the art would understand from the figures and from the description of Rasmussen, that if the pillow were turned, one could see where the bottom edge of the sidewall 160 engages and joins the peripheral edge of the bottom layer 140. This boundary where sidewall 160 engages and joins the peripheral edge of the bottom layer 140 is also highlighted red in the cross sectional view provided in Fig. 2 below.



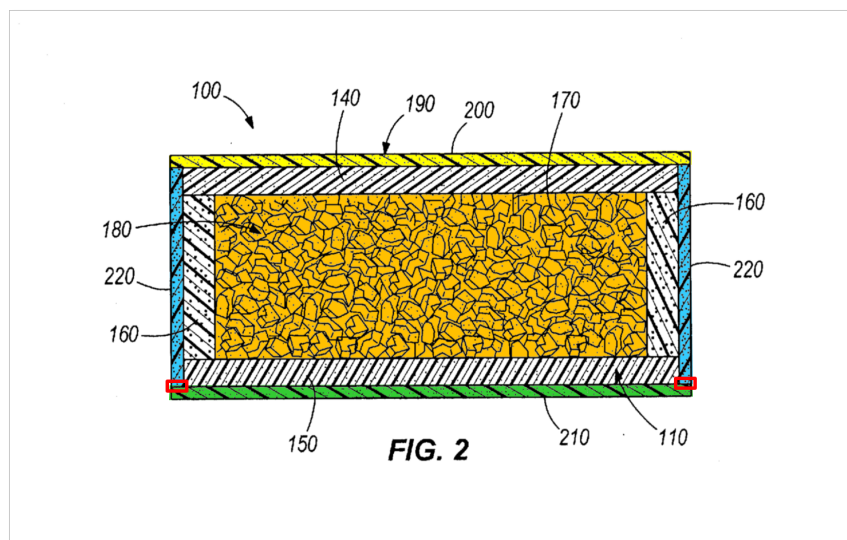
116. Rasmussen's core also satisfies claim 3's requirement that the gusset "perimetrically bounds said first and second panels." As discussed, the sidewall 160 engages the edges of the top layer 140 and bottom layer 150 along their perimeters and thus perimetrically bounds these panels.

117. Rasmussen's cover also satisfies claims 2 and 3 for the same reasons. The top portion 200, bottom portion 210, and side portion 220 correspond to and

can be configured in the very same arrangement as the corresponding components of core 110, i.e., top layer 140, bottom layer, 150, and sidewalls 160. Ex. 1006 at [0048] (“The top portion 200 can be configured to lie adjacent and cover the top layer 140 of the core 110, whereas the bottom portion 210 can be configured to lie adjacent and cover the bottom layer 150 of the core 110, and the side portion 220 can be configured to lie adjacent and cover the sidewalls 160 of the core 110.”); Ex. 1007 at [0044]. For claim 2, in Rasmussen’s cover, the top edge of the gusset, i.e., side portion 220, constitutes the claimed “first end of said gusset” that engages the edge of the first panel, i.e., top portion 200, along its perimeter. The side portion 220 can correspond to and lie adjacent to sidewall 160 and thus similarly extends continuously about an entire portion of this perimeter. While Rasmussen does not provide a perspective view similar to Fig. 1 that depicts the cover, Rasmussen does depict the cover in the cross-sectional view of Fig. 2. The boundary where side portion 220 engages and joins the peripheral edge of the top portion 200 is highlighted red in Fig. 2 below.



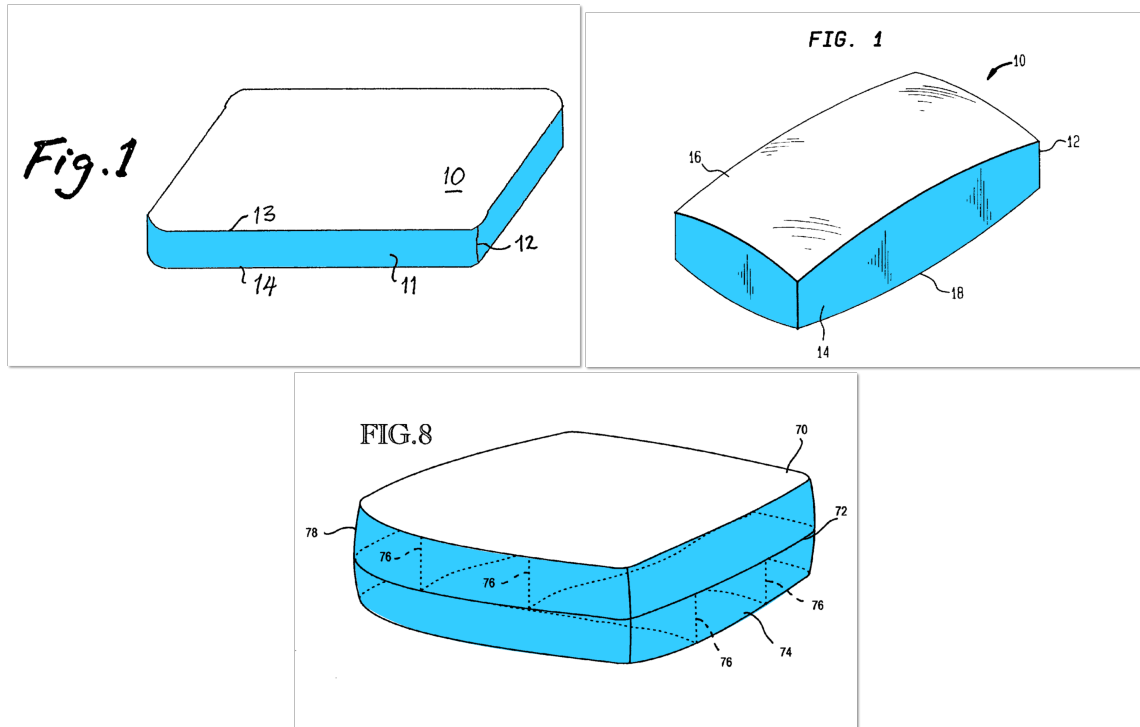
Further, the bottom edge of the gusset, i.e. side portion 220, constitutes the claimed “second end of said gusset opposite said first edge” that engages the edge of the second panel, i.e., bottom portion 210, along its perimeter. The side portion 220 can correspond to and lie adjacent to sidewall 160 and thus similarly extends continuously about an entire portion of this perimeter. The boundary where side portion 220 engages and joins the peripheral edge of the bottom portion 210 is highlighted red in Fig. 2 below.



Although the figures do not show all sides of the pillow, a person of ordinary skill in the art would understand from the figures and from the description of Rasmussen, that if the pillow were turned, one could see where the top edge of the side portion 220 engages and joints the peripheral edge of the top portion 200 and where the bottom edge of the side portion 220 engages and joins the peripheral edge of the bottom portion 210.

118. Rasmussen's cover also satisfies claim 3's requirement that the gusset "perimetrically bounds said first and second panels." As discussed, the side portion 220 engages the edges of the top layer portion 200 and bottom portion 210 along their perimeters and thus perimetrically bounds these panels.

119. In my opinion, Rasmussen anticipates claims 2-3. However, I was also asked to provide my opinion as to whether claims 2-3 would have also been obvious to a person of ordinary skill in the art based on Rasmussen. It is my opinion that it would have indeed been obvious. As I have discussed above in Section IV.B, the basic design of a gusseted pillow that uses a perimetric gusset that perimetrically bounds and joins opposing top and bottom panels along their perimeters was well known in the art long before the alleged invention. See, e.g., Exs. 1014 (Delfs), 1015 (Starkey), 1019 (Hollander).



As the prosecution history discussed above in Section IV.A reveals, numerous pieces of prior art, including Delfs and Starkey, were used to reject these “perimetric gusset” claim limitations. It has long been known and common in the industry to utilize a perimetric gusset in pillows that perimetrically bounds the perimeters of opposing top and bottom panels. In my opinion, it is one of a finite number of basic design choices available to any pillow designer to choose from in designing a pillow. Such perimetric gussets sharing a footprint with top and bottom panels have long been a common and obvious potential design choice, for numerous reasons, both aesthetic and functional. From an aesthetic standpoint, it looks “clean cut” to have the gusset footprint common with the footprint of the top and bottom panels (i.e., sharing an outer perimeter), and it provides a more

conventional appearance that would be demanded by consumers in the market. Such gussets have also been used in the prior art to include decorative fabric or perhaps product branding information. Functionally, such gussets allow for spacing between the top and bottom panels so that more fill material can be inserted and so that proper spine alignment can be achieved; and using a gusset sharing a common perimeter with the top and bottom panels was also known to ease manufacture of the pillow. Implementing a perimetric gusset that perimetrically bounds opposing top and bottom panels in a pillow would have required nothing more than ordinary skill and common sense, and a designer could readily implement such a gusset without undue experimentation and with expected results.

120. While Rasmussen does not visually depict its pillow from all angles in its figures, a person of ordinary skill in the art would have understood Rasmussen's construction regardless, as I explained above. And, even if Rasmussen were found to somehow not expressly disclose the requirements of claims 2-3, in my opinion, claims 2-3 would have nonetheless been obvious to a person of ordinary skill in the art in light of Rasmussen for all of the reasons in the preceding paragraph.

iii. Claim 4

121. I was asked to consider whether Rasmussen's core and cover each separately satisfy claim 4's requirement that "said gusset is formed of an open cell

construction.” It is my opinion that it does with respect to each of Rasmussen’s core 110 and Rasmussen’s cover 190, separately and independently.

122. I incorporate my analysis from above with respect to claim 1 in Section IV.F.i. As I discussed in that section, the core 110 and cover 190 both separately teach using “highly porous” “3D textile material” in the gusset (i.e., sidewalls 160 of the core 110, or side portion 220 of the cover 190) of a pillow. Ex. 1006 at [0008, 0029, 0049-0050]; Ex. 1007 at [0005, 0025, 0045-0046]. As I also discussed, Rasmussen expressly teaches that the gusset, i.e., sidewalls 160, of the core 110 can be more porous than the top layer 140 and bottom layer 150 of the core 110, and Rasmussen expressly teaches that the gusset, i.e., side portion 220, of the cover 190 can be more porous than the top portion 200 and bottom portion 210 of the cover 190, to facilitate lateral ventilation through the sides of the pillow. *Id.*

123. Thus, Rasmussen teaches, separately, for both the core and cover, to a person of ordinary skill in the art that the gusset is formed of an open cell construction, as required by claim 4.

124. In addition, as I discussed in Section IV.D.ii above, the ‘883 Patent does not use the term “open cell construction” in the conventional manner used in the industry and I note that the examiner had not accorded the term specific patentable weight. I was asked to, nonetheless, apply the patent’s definition of this term (“a construction having overall porosity greater than the inherent porosity of

the constituent material or inherently having high porosity,” Ex. 1001 at 1:41-44) as the claim construction of this term and offer my opinion of whether claim 4 is taught by Rasmussen when applying this construction. In my opinion, a person of ordinary skill in the art would understand Rasmussen’s “highly porous” “3D textile material” (as used in the side portion 220, i.e., gusset, of the cover; and, separately, as used in the sidewalls 160, i.e., gusset, of the core) satisfies this definition of an “open cell construction” for the core and the cover, separately. Like the ‘883 patent’s express definition’s reference to “high porosity,” Rasmussen teaches that its 3D textile gusset (for both the core and the cover) is “highly porous.” Ex. 1006 at [0029, 0049]; Ex. 1007 at [0025, 0045]. In addition, a person of ordinary skill would understand that, in a highly porous 3D textile, the porosity of the material would also be greater than that of the fibers of which the textile is comprised. Thus, in my opinion, Rasmussen’s core and cover each satisfy claim 13’s requirement of a gusset formed of an “open cell construction” under the patent’s definition of that term, i.e., “a construction having overall porosity greater than the inherent porosity of the constituent material or inherently having high porosity.”

125. Further, the ‘883 Patent specification teaches that its “base material 30” can be “inherently significantly porous” and provides “3D spacer fabric, which is inherently highly porous” as a preferred example. And, in my opinion, a person of ordinary skill in the art (POSITA) would have understood Rasmussen’s

description of the use of “highly porous” “3D textile material” in the sides, i.e. gusset, of a pillow “to improve the micro-climate of the pillow [] with respect to humidity and temperature” and that also provides structural strength to be 3D spacer fabric. I have discussed 3D spacer fabrics in more detail above in Section IV.B. Even though the drafter of Rasmussen utilized the term “3D textile material,” a person of ordinary skill in the art would have understood this to be 3D spacer fabric for numerous reasons. Rasmussen describes this “3D textile material” as being “highly porous,” as improving the “micro-climate of the pillow” and as being capable of potentially imparting structural strength. Ex. 1006 at [0049], [0050], & [0029]. It was known in the art that the term “3D spacer fabric” and simply “spacer fabric” were often referred to and used interchangeably as “3D textile structures”¹⁶ and as “3-dimensional fabric.”¹⁷ It was also known to refer to the breathable air-filled zone between the top and bottom layers of 3D spacer fabric as creating a “microclimate” between the textile and the skin to promote ventilation, cooling, and evaporation of moisture, such as from perspiration.¹⁸ It was also known that 3D spacer fabrics provided some structural strength from their

¹⁶ Ex. 1037, Ertekin, G., “Heat, Air, and Water Vapor Transfer Properties of Circular Knitted Spacer Fabrics,” *Tekstil ve Konfeksiyon*, 2011, at p. 370 (“Spacer fabrics are 3-dimensional textile structures . . .”).

¹⁷ Ex. 1009, Schlüssel, at [0016] (“Spacer fabric, also known as double needle bar fabrics (typically knitted on a double needle bar machine) or 3-dimensional fabric . . .”).

¹⁸ Ex. 1038, Heide, M., “Spacer fabrics: trends,” *Kettenwirk-Praxis*, 2001, at E18 (“[T]he air-filled zone between the two outer substrates creates a microclimate between the body of the patient and the cover, which prevents heat from building up and moisture in the form of perspiration can pass from the skin . . .”); E19 (“microclimate”).

middle layer of monofilaments preventing deformation, such as for use in pressure-relieving applications.¹⁹ Further, as I have discussed in more detail above in Section IV.B., 3D spacer fabrics were gaining popularity in the bedding industry for use in mattresses and pillows during the timeframe of Rasmussen's initial filing date (of the Rasmussen Provisional) of December 24, 2008, including for the specific use of lateral ventilation and cooling. Thus, in my opinion, a person of ordinary skill in the art reading Rasmussen would have come to the conclusion that Rasmussen was teaching the use of 3D spacer fabric when Rasmussen was referring to the use of "3D textile material" in the sides of Rasmussen's pillow for ventilation and cooling. On this additional basis, Rasmussen's gusset (of each of its core and cover separately) would have been understood by a person of ordinary skill to be formed of an open cell construction, if the patent's express definition of that term is applied.

126. I was also asked to provide my opinion of whether it would have been obvious to use 3D spacer fabric in the gusset of Rasmussen based on Rasmussen's teachings in the event Rasmussen were found to not expressly disclose the use of 3D spacer fabric in the gusset. It is my opinion that it would have indeed been obvious. Even in the event that Rasmussen's disclosure of use of "highly porous" "3D textile material" in the gusset of a pillow were found to not expressly disclose

¹⁹ Ex. 1038, at E18 ("pressure-relieving effect of spacer fabrics").

3D spacer fabric, it is my opinion that Rasmussen would nonetheless, at a minimum, be read by a person of ordinary skill in the art to be extremely suggestive of using 3D spacer fabric for all of the reasons I have just set forth above. As discussed in Section IV.B above, 3D spacer fabrics had been long known prior to the '883 Patent and it had been known to use 3D spacer fabrics for their ability to improve airflow/breathability, remove moisture, and improve comfort in textiles that contact the skin, including in mattresses and pillows. As also discussed in Section IV.B, it had also been known that 3D spacer fabrics could be used to improve lateral ventilation and the sleeping "microclimate," in the same manner as the "3D textile material" is employed in Rasmussen. Thus, a person of ordinary skill in the art would have found 3D spacer fabric to be interchangeable with the "3D textile material" used in Rasmussen and could have implemented 3D spacer fabric without undue experimentation and with expected and predictable results. A person of ordinary skill in the art, in my opinion, upon reading Rasmussen, would have, at a minimum, found it obvious to use 3D spacer fabric for the "highly porous" "3D textile material" in the gusset of Rasmussen. Thus, on this additional basis, it would have been obvious to a person of ordinary skill in the art, in light of Rasmussen, for Rasmussen's gusset (of each of its core and cover separately) to be formed of an open cell construction, if the patent's express definition of that term is applied.

127. It is my opinion that Rasmussen anticipates claim 4. However, I was also asked to provide my opinion as to whether claim 4 would have been obvious to a person of ordinary skill in the art based on Rasmussen. For the same reasons I have discussed above with regard to why claim 1 would have been obvious based on Rasmussen, claim 4 would have been obvious. I can discern no meaningful distinction between the requirements of claim 4 and the teachings of Rasmussen. As discussed above in Section IV.B, porous side vents for pillows to provide for lateral ventilation have long been well known, the basic structure of a gusseted pillow having opposing top and bottom panels joined by a perimetric gusset has long been well known, it was known at least since 1960 to place vents into the gusset of such a pillow for lateral ventilation, it was known to place mesh vents, including 3D spacer fabric vents, into the sides of mattresses and cushions, to provide for lateral ventilation and cooling prior to the alleged '883 invention, and it was known prior to the alleged '883 invention to place 3D spacer fabric on pillow covers. A person of ordinary skill in the art, in light of this background of knowledge and prior art, reading the Rasmussen disclosure would have readily arrived at claim 4 without undue experimentation and with expected results. A person of ordinary skill in the art would have also been motivated to and had reason to arrive at the invention of claim 4 based on Rasmussen, because it was well known that it was desirable to utilize porous materials in the top and bottom

panels of a pillow, as well as in the gusset, so as to provide a cooler and more comfortable sleeping environment—and Rasmussen acknowledges that it was desirable to obtain such characteristics in pillows. It was also known to provide such airflow to prevent uncomfortable “ballooning” in pillows, such as can be caused from air becoming trapped inside.²⁰ I am aware of no “secondary considerations” set forth in the list provided above in Section III.B that would suggest claim 4 was non-obvious. On the contrary, the consideration of “lack of independent simultaneous invention within a comparatively short space of time” suggests claim 4 was obvious. As I discussed above at the end of Section IV.B, I was personally working on pillows and mattresses using 3D spacer fabric sides to provide for lateral ventilation and cooling in the same timeframe as the alleged invention of the ‘883 Patent, and I never viewed the concept as inventive or proprietary. Instead, to me, it was an application of ordinary skill and common sense arising from the known applications of spacer fabrics in bedding and the known desire to provide for lateral ventilation in bedding products, especially those utilizing memory foam, which has a known tendency to accumulate heat, which can decrease comfort. Thus, in my opinion, claim 4 is also obvious in light of Rasmussen.

²⁰ See, for example, U.S. Patent No. 8,561,233 to Navan (filed Sept. 15, 2008) at 3:5-9, for a discussion of ballooning leading to discomfort.

iv. Claim 7

128. I was asked to consider whether Rasmussen teaches claim 7's requirement of "[a] pillow as recited in claim 1, wherein said first panel is formed with a moisture dispersing material." It is my opinion that it does for both Rasmussen's core and cover, separately. The '883 Patent describes the use of polyester fabric as an exemplary moisture-wicking fabric that allows for moisture dispersion, and as a result cooling to occur for the portions of the user's body in contact with the pillow. Ex. 1001 at 4:38-43. This is consistent with the understanding of a person of ordinary skill in the art, who would have been aware of polyester as a moisture dispersing material, as well as a myriad of other different types of moisture dispersing materials that could be used in a panel of a pillow prior to the alleged invention for the purpose of wicking moisture away from the user's body.

129. With regard to Rasmussen's cover 190, Rasmussen teaches that the top portion 200 of the cover, i.e. the first panel, could be "a double jersey fabric, velour, or stretch velour," and that various alternative materials could be used "including without limitation any synthetic and/or natural fabric or cloth material, such as cotton, polyester, a cotton/polyester blend, wool, and visco-elastic or non-visco-elastic foam sheeting." Ex. 1006 at [0050,0052]; Ex. 1007 at [0046,0048]. Thus, Rasmussen teaches a person of skill in the art that the panels of its cover,

including top portion 200, could be made of polyester, a known moisture-dispersing material. It was well known prior to the alleged invention that fabrics like velour or stretch velour would commonly be knit from polyester or other synthetic fibers, because of those fibers' known moisture dispersing properties. Thus, Rasmussen's teaching that synthetic fibers, such as polyester, could be used in the components of the pillow cover 190 is not surprising and represents a common practice in the industry. Polyester fibers, and therefore fabrics, have low moisture regain (less than 1%) and dry quickly. These properties of polyester allow it to transport water readily without absorbing it and staying wet. The excellent moisture transport properties of polyester are why it is commonly used in applications where moisture wicking fabrics are preferred in order to enhance comfort. By comparison, cotton fibers have a higher moisture regain, upwards of 10%. Cotton is considered to be highly absorbent and also slow to dry. As such, cotton is not a desirable fiber for moisture transport applications.

130. Rasmussen's core 110 also teaches claim 6's requirement of using a "moisture dispersing material" in the first panel. Specifically, Rasmussen teaches that reticulated visco-elastic foam can be used for the first panel, i.e., top layer 140, and that this use of reticulated foam can "enhance the ability of the pillow 100 to wick moisture away from the user's body thereon." Ex. 1006 at [0022]; Ex. 1007 at [0018]. Rasmussen teaches that "[b]y virtue of the skeletal cellular structure of

reticulated visco-elastic foam used for the top layer 140 and/or the bottom layer 150, heat and moisture can be transferred away from the source of heat (e.g., a user's body).” Ex. 1006 at [0024]; Ex. 1007 at [0020]. This teaching is consistent with the understanding of an ordinary skilled artisan who would have known before the alleged invention that use of reticulated memory foams would improve airflow and thereby enhance moisture transport. Thus, a person of ordinary skill in the art would have understood from these teachings that the core of Rasmussen, including its top layer 140, could be formed of a “moisture dispersing material.”

131. I was also asked to consider whether it would have been obvious to utilize moisture dispersing material in the top and bottom panels of a pillow (i.e., as required by claim 7’s limitation that the first panel be formed with a moisture dispersing material). It is my opinion that it would have been obvious. It was an obvious design choice and commonplace in the industry to incorporate synthetic fibers, such as polyester, into the top and bottom panels of a pillow that come into contact with the sleeper’s skin. It has long been a well known problem that moisture buildup from perspiration during sleep creates discomfort and this problem could be addressed through use of moisture dispersing/wicking fibers such as polyester, which is very commonly used in pillow covers. Thus, it would have been obvious to incorporate such materials into the top and bottom panels of a pillow.

v. Claims 8 and 10

132. I was asked to consider whether the somewhat related requirements of claims 8 and 10 are taught by Rasmussen. It is my opinion that they are.

133. Claim 8 requires the pillow of claim 1 “wherein said first panel, said second panel and said gusset define a cover, said pillow further comprising a fill material disposed within said cover.” Rasmussen’s core 110 and cover 190 both satisfy this claim. Rasmussen’s core 110 includes a top layer 140, bottom layer 150, and sidewalls 160 that together define a cavity 170 containing filler material 180 disposed within. Ex. 1006 at [0015], Figs. 1-2; Ex. 1007 at [0011], Figs. 1-2. Thus, the components of core 110 (top layer 140, bottom layer 150, and sidewalls 160) serve as a cover for the fill material. While claim 8 does not require the claimed “cover” to be the “outer” cover per se, the components of core 110 can serve as an outer cover for the pillow in the embodiments that do not include the outer cover 190 (which Rasmussen expressly teaches “can” be included and is, thus, optional).

134. Rasmussen’s core 110 also satisfies claim 10’s requirement of “[a] pillow as recited in claim 8, wherein said fill material comprises a compliant fill material.” “Compliant” fill material is understood to persons of ordinary skill in the art to be fill material that is resiliently deformable in that it will regain its original shape after an applied force is removed. Ex. 1041, Oxford Dictionary

(“compliant” & “compliance”). Pillows are commonly designed with compliant fill material that is designed to regain its original shape after an applied force is removed, as opposed to fill material that is designed to be shaped or molded by the user to retain a desired shape. A common example of such compliant fill material is memory foam, which is commonly used in bed pillows for supporting the head and neck. The ‘883 Patent expressly describes “memory foam (solid layer(s) and/or clusters)” as an example of one of the compliant fill materials that can be used in its patented pillow. Ex. 1001 at 3:39-55.

135. Rasmussen discloses, among various examples of fill materials that can be used, using reticulated or non-reticulated granulated visco-elastic foam of varying densities and hardness for the “filler material 180” of Rasmussen’s pillow. Ex. 1006 at [0030]-[0035]; *see also id.* at [0036]-[0045] (discussing various examples); Ex. 1007 at [0026]-[0041]. Rasmussen notes that visco-elastic foam is “sometimes referred to as ‘memory foam.’” Ex. 1006 at [0019]; Ex. 1007 at [0015]. Rasmussen teaches that “[t]he resiliently deformable nature of the filler 180 can therefore provide a degree of user comfort to the extent that the user’s weight affects the shape of the pillow 100.” Ex. 1006 at [0031]; Ex. 1007 at [0027]. Rasmussen’s core 110, therefore, contains compliant fill material, satisfying claim 10.

136. Cover 190 of Rasmussen also satisfies claims 8 and 10. With respect to claim 8, the cover 190's top portion 200, bottom portion 210, and side portion 220 are a first panel, second panel, and gusset that define a cover that contains "filler material 180" and the components of core 110 itself—the foam components of core 110 and filler material 180 would all collectively be considered by a person of ordinary skill in the art to be fill material contained within the outer cover 190 (for the embodiments of the pillow 100 that include the optional outer cover 190). Ex. 1006 at [0048], Figs. 1-2; Ex. 1007 at [0044], Figs. 1-2.

137. The cover 190 also satisfies claim 10's requirement of "compliant" fill material in that the cover 190 contains fill material in the form of both the components of core 110 and filler material 180 which can be comprised of reticulated viscoelastic foam. See Ex. 1006 at [0019,0022,0030-0031,0036]; Ex. 1007 at [0015,0018,0026-0027,0032].

138. While I believe Rasmussen anticipates claims 8 and 10, I was also asked to opine on whether the requirements of these claims would have also been obvious based on Rasmussen. It is my opinion that they would have indeed been obvious. Claims 8 and 10 add limitations that have long been "basic" features of many pillows well before the alleged invention. As discussed above in Section IV.B, pillows having a basic design of a top panel, a bottom panel, a gusset joining those panels, and filler material contained therein, including compliant fill material

have long been known and commonplace in bedding. In my opinion, the features of claims 8 and 10 have all long been known to be desirable routine design choices to persons of ordinary skill and all could be readily used in a pillow design with expected results, without undue experimentation. These features would have been obvious to a person of ordinary skill in the art, especially in light of the teachings of Rasmussen.

vi. Claim 9

139. I was asked to consider whether Rasmussen teaches the limitations of claim 9. In my opinion, it does, with respect to both the core and the cover. Rasmussen teaches that one or more of the components of its core may be at least partially separable through use of “one or more releasable fasteners,” such as “zippers,” “buttons,” etc. The fastener “can be located between the top layer 140 and sidewall 160, between a sidewall 160 and the bottom layer 150, or within an opening in the top layer 140, sidewall 160, and/or bottom layer 150, and can be positioned to allow access to the cavity 170, such as to remove or add filler material 180 within the cavity 170.” Ex. 1006 at [0018]; Ex. 1007 at [0014]. This, of course, is and has been an extremely common feature in pillows for a very long time. Thus, with respect to Rasmussen’s “core,” Rasmussen teaches a cover that is at least partially separable into at least two portions being selectively joinable by a

fastening means, because the fastener, e.g., zipper, would create at least two portions that are selectively joinable.

140. Similarly, Rasmussen teaches that seams between components of the cover 190 can be attached by various means including “conventional fasteners (e.g., zippers, buttons, clasps, laces, hook and loop fastener material, hook and eye sets, tied ribbons, strings, cords, or other similar elements, and the like).” Ex. 1006 at [0052]; Ex. 1007 at [0048]. Rasmussen also teaches that “the cover 190 is removable . . . such as by being shaped to slip onto and off of the layers 140, 150 and sidewalls 160, by one or more releasable fasteners (e.g., zippers, buttons, clasps . . .),” that “any such fasteners can be positioned to releasably secure at least one portion of a cover 190 to another portion of the cover 190,” and that “[f]or example, the cover 190 can have a zippered slot through which the core 110 and plurality of lobes 120, 130 can be removed.” Ex. 1006 at [0053]; Ex. 1007 at [0049]. Thus, with respect to Rasmussen’s “cover,” Rasmussen teaches a cover that is at least partially separable into at least two portions being selectively joinable by a fastening means, because the fastener, e.g., zipper, would create at least two portions that are selectively joinable.

141. While I believe Rasmussen anticipates claim 9, I was also asked to opine on whether claim 9 would have been obvious based on Rasmussen. It is my opinion that claim 9 would have been obvious. The use of zippers and other

fasteners in covers for pillows have long been commonplace.²¹ It would have been an obvious design choice for a person of ordinary skill to use a zipper or other fastener to create a pillow cover with two at least partially separable portions that are selectively joinable by the fastener. It has been long known to be a routine and desirable design choice so as to allow removal or replacement of fill material, to facilitate washing of the pillow cover separate from the pillow's fill material, to facilitate adjustment of fill material, etc. Claim 9, therefore, would have also been obvious over Rasmussen to a person of ordinary skill in the art.

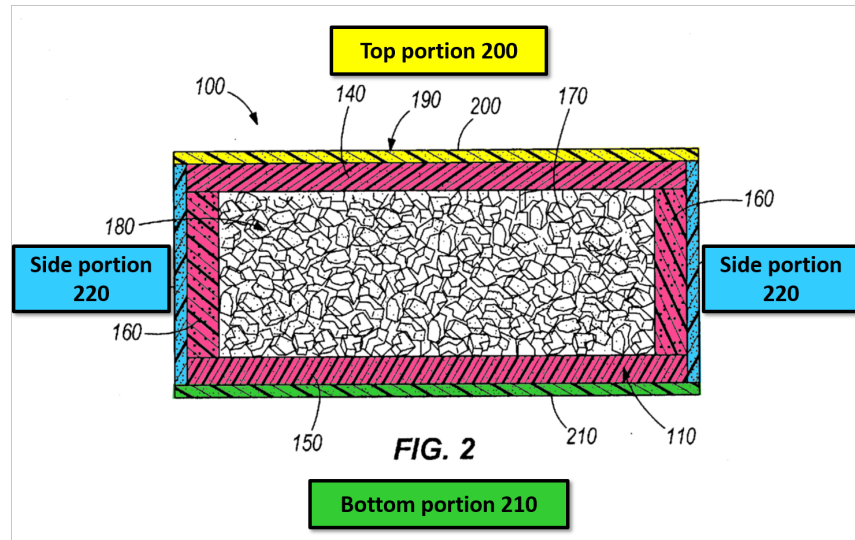
vii. Claim 13

142. In my opinion, Rasmussen satisfies claim 13's requirement of "[a] pillow as recited in claim 8, further comprising an inner cover disposed inside of said cover, at least a portion of said fill material being disposed within said inner cover." The "cover 190" of Rasmussen satisfies the requirements of "said cover" of claim 8, as discussed above—the cover 190's "said first panel," i.e. top portion 200, "said second panel," i.e., bottom portion 210, and "said gusset," i.e., side portion 220) define "said cover" with fill material, i.e. filler material 180, disposed within "said cover."²² Further, "core 110" is within the cover 190 and thus serves

²¹ See, e.g., Ex. 1019, Hollander (1998), at 3:60-65; Ex. 1026, Gamm (1989) at 2:27-36, Fig. 1; U.S. Patent No. 6,988,286 to Schecter (2006) at 11:29-49; U.S. Patent No. 4,756,035 to Beier (1987) at 3:4-28.

²² Note that claim 8 does not require the fill material to be directly against the inner surfaces of the cover and merely requires the fill material to be "disposed within

as an “inner cover” disposed inside of cover 190 and at least a portion of said fill material, i.e. filler material 180, is disposed within said inner cover (core 110). Thus, the fill material is within both the inner cover (core 110) and the outer cover (cover 190). For the embodiments of the pillow 100 of Rasmussen that have the outer cover (cover 190), a person of ordinary skill in the art would understand that the core 110 serves as an inner cover (as depicted in pink below) that contains the filler material 180 within it.



143. While I believe Rasmussen anticipates claim 13, I was also asked to opine on whether the requirements of this claim would have also been obvious based on Rasmussen. It is my opinion that it would have indeed been obvious. At a bare minimum, Rasmussen’s teachings of a separate outer cover 190 and separate inner core 110 that contains filler material within it are highly suggestive to a

said cover.” Thus the fill material can be within an inner cover that is disposed within the cover, as is recited in claim 13, which depends from claim 8.

person of ordinary skill in the art to use both an outer cover and an inner cover disposed therein that contains at least a portion of the fill material. Further, the use of such an inner cover, as required by claim 13—i.e., to use a pillow that has both an outer cover, as well as an inner cover that contains at least a portion of the fill material within it—has been, of course, a common design element known in the art well before the alleged invention. This common feature of many pillows has long been used to provide, for example, an outer cover that can be removed for washing, an outer cover that is softer to the touch/skin, or a changeable outer cover to allow for a different style/color of pillow cover to be used, while keeping the fill material contained in the inner cover—and these uses of an outer cover over an inner cover, of course, long pre-dated the alleged invention and were well known in the art.²³ Inner covers were also known to be used for providing antimicrobial, anti-odor, fireproof, or aromatherapy properties.²⁴ Further, it was also known in the industry that the use of an outer cover over an inner cover could be used to allow slippage between the outer cover and inner cover for comfort—rather than having the pillow’s outer cover in direct contact with fill material that may cause

²³ See, as examples, U.S. Patent No. 2,357,789 to Levy, filed June 30, 1942; U.S. Patent No. 3,290,703 to Worrall, filed Sept. 24, 1964; U.S. Patent No. 4,864,669 to Jones, filed Feb. 3, 1989; U.S. Patent No. 5,727,266 to Pang, filed Aug. 5, 1996; U.S. Patent No. 6,910,237 to DiGirolamo, filed Feb. 7, 2003; U.S. Patent No. 6,928,675 to Hamilton, filed Jan. 14, 2004; *see also* Ex. 1045, EP1378193 to Vuiton (2004) (translated to English); Ex. 1047 (Declaration of accuracy).

²⁴ Ex. 1045, EP1378193 to Vuiton (2004) (translated to English) at [0015]; Ex. 1047 (Declaration of accuracy).

uncomfortable wrinkles from friction between the outer cover and fill material. Thus, it was obvious before the alleged invention to use an inner cover to contain fill material for any of these reasons. In my opinion, claim 13 would have been obvious to a person of ordinary skill in the art in light of Rasmussen, in addition to being anticipated by Rasmussen.

viii. Claims 14/15

144. I was asked to consider whether Rasmussen teaches the requirement of claims 14 and 15 of a “pillow as recited in claim 1, wherein said gusset is formed of an open cell construction and a base material, and said open cell construction is formed by porosity of said base material being substantially greater than porosity of material forming said first panel and substantially greater than porosity of material forming said second panel.” I note that the two claims are identical, and thus I will analyze them simultaneously. For the claim construction of the term “substantially greater than,” I have been asked to use and have used the ‘883 Patent’s express definition of this claim term, which recites that this term “refers to being at least greater than.” Ex. 1001 at 2:58-60. It is my opinion that both Rasmussen’s core 110 and cover 190 separately teach the limitations of claims 14 and 15.

145. I incorporate my analysis from above with respect to claims 1 and 4 in Sections IV.F.i and IV.F.iii. As I discussed in those sections, the core 110 and

cover 190 both separately teach using “highly porous” “3D textile material” in the gusset (i.e., sidewalls 160 of the core 110, or side portion 220 of the cover 190) of a pillow. Ex. 1006 at [0008, 0029, 0049-0050]; Ex. 1007 at [0005, 0025, 0045-0046]. As I also discussed, Rasmussen expressly teaches that the gusset, i.e., sidewalls 160, of the core 110 can be more porous than the top layer 140 and bottom layer 150 of the core 110, and Rasmussen expressly teaches that the gusset, i.e., side portion 220, of the cover 190 can be more porous than the top portion 200 and bottom portion 210 of the cover 190, to facilitate lateral ventilation through the sides of the pillow. *Id.*

146. Thus, Rasmussen teaches, separately, for both the core and cover, to a person of ordinary skill in the art that the gusset is formed of a base material and an open cell construction formed by the porosity of the base material being greater than both the porosity of the material forming the top panel and the porosity of the material forming the bottom panel, as required by claims 14 and 15.

147. In addition, as I discussed in Section IV.D.ii above, the ‘883 Patent does not use the term “open cell construction” in the conventional manner used in the industry and I note that the examiner had not accorded the term specific patentable weight. I was asked to, nonetheless, apply the patent’s definition of this term (“a construction having overall porosity greater than the inherent porosity of the constituent material or inherently having high porosity,” Ex. 1001 at 1:41-44)

as the claim construction of this term and offer my opinion of whether claim 13 is taught by Rasmussen when applying this construction. In my opinion, a person of ordinary skill in the art would understand Rasmussen's "highly porous" "3D textile material" (as used in the side portion 220, i.e., gusset, of the cover; and, separately, as used in the sidewalls 160, i.e., gusset, of the core) satisfies this definition of an "open cell construction" for the core and the cover, separately. Like the '883 patent express definition's reference to "high porosity," Rasmussen teaches that its 3D textile gusset (for both the core and the cover) is "highly porous." Ex. 1006 at [0029, 0049]; Ex. 1007 at [0025, 0045]. In addition, a person of ordinary skill would understand that, in a highly porous 3D textile, the porosity of the material would also be greater than that of the fibers of which the textile is comprised. Thus, in my opinion, Rasmussen's core and cover each satisfy the requirement of claims 14 and 15 of a gusset formed of an "open cell construction" under the patent's definition of that term.

148. Further, the '883 Patent specification teaches that its "base material 30" can be "inherently significantly porous" and provides "3D spacer fabric, which is inherently highly porous" as a preferred example. And, in my opinion, a person of ordinary skill in the art (POSITA) would have understood Rasmussen's description of the use of "highly porous" "3D textile material" in the sides, i.e. gusset, of a pillow "to improve the micro-climate of the pillow [] with respect to

humidity and temperature” and that also provides structural strength to be 3D spacer fabric. I have discussed 3D spacer fabrics in more detail above in Section IV.B. Even though the drafter of Rasmussen utilized the term “3D textile material,” a person of ordinary skill in the art would have understood this to be 3D spacer fabric for numerous reasons. Rasmussen describes this “3D textile material” as being “highly porous,” as improving the “micro-climate of the pillow” and as being capable of potentially imparting structural strength. Ex. 1006 at [0049], [0050], & [0029]. It was known in the art that the term “3D spacer fabric” and simply “spacer fabric” were often referred to and used interchangeably as “3D textile structures”²⁵ and as “3-dimensional fabric.”²⁶ It was also known to refer to the breathable air-filled zone between the top and bottom layers of 3D spacer fabric as creating a “microclimate” between the textile and the skin to promote ventilation, cooling, and evaporation of moisture, such as from perspiration.²⁷ It was also known that 3D spacer fabrics provided some structural strength from their middle layer of monofilaments preventing deformation, such as for use in pressure-

²⁵ Ex. 1037, Ertekin, G., “Heat, Air, and Water Vapor Transfer Properties of Circular Knitted Spacer Fabrics,” *Tekstil ve Konfeksiyon*, 2011, at p. 370 (“Spacer fabrics are 3-dimensional textile structures”).

²⁶ Ex. 1009, Schlüssel, at [0016] (“Spacer fabric, also known as double needle bar fabrics (typically knitted on a double needle bar machine) or 3-dimensional fabric”).

²⁷ Ex. 1038, Heide, M., “Spacer fabrics: trends,” *Kettenwirk-Praxis*, 2001, at E18 (“[T]he air-filled zone between the two outer substrates creates a microclimate between the body of the patient and the cover, which prevents heat from building up and moisture in the form of perspiration can pass from the skin”); E19 (“microclimate”).

relieving applications.²⁸ Further, as I have discussed in more detail above in Section IV.B., 3D spacer fabrics were gaining popularity in the bedding industry for use in mattresses and pillows during the timeframe of Rasmussen's initial filing date (of the Rasmussen Provisional) of December 24, 2008, including for the specific use of lateral ventilation and cooling. Thus, in my opinion, a person of ordinary skill in the art reading Rasmussen would have come to the conclusion that Rasmussen was teaching the use of 3D spacer fabric when Rasmussen was referring to the use of "3D textile material" in the sides of Rasmussen's pillow for ventilation and cooling. On this additional basis, Rasmussen's gusset (of each of its core and cover separately) would have been understood by a person of ordinary skill to be formed of an open cell construction, if the patent's express definition of that term is applied.

149. I was also asked to provide my opinion of whether it would have been obvious to use 3D spacer fabric in the gusset of Rasmussen based on Rasmussen's teachings in the event Rasmussen were found to not expressly disclose the use of 3D spacer fabric in the gusset. It is my opinion that it would have indeed been obvious. Even in the event that Rasmussen's disclosure of use of "highly porous" "3D textile material" in the gusset of a pillow were found to not expressly disclose 3D spacer fabric, it is my opinion that Rasmussen would nonetheless, at a

²⁸ Ex. 1038, at E18 ("pressure-relieving effect of spacer fabrics").

minimum, be read by a person of ordinary skill in the art to be extremely suggestive of using 3D spacer fabric for all of the reasons I have just set forth above. As discussed in Section IV.B above, 3D spacer fabrics had been long known prior to the '883 Patent and it had been known to use 3D spacer fabrics for their ability to improve airflow/breathability, remove moisture, and improve comfort in textiles that contact the skin, including in mattresses and pillows. As also discussed in Section IV.B, it had also been known that 3D spacer fabrics could be used to improve lateral ventilation and the sleeping "microclimate," in the same manner as the "3D textile material" is employed in Rasmussen. Thus, a person of ordinary skill in the art would have found 3D spacer fabric to be interchangeable with the "3D textile material" used in Rasmussen and could have implemented 3D spacer fabric without undue experimentation and with expected and predictable results. A person of ordinary skill in the art, in my opinion, upon reading Rasmussen, would have, at a minimum, found it obvious to use 3D spacer fabric for the "highly porous" "3D textile material" in the gusset of Rasmussen. Thus, on this additional basis, it would have been obvious to a person of ordinary skill in the art, in light of Rasmussen, for Rasmussen's gusset (of each of its core and cover separately) to be formed of an open cell construction, if the patent's express definition of that term is applied.

150. It is my opinion that Rasmussen anticipates claims 14 and 15. However, I was also asked to provide my opinion as to whether claims 14 and 15 would have been obvious to a person of ordinary skill in the art based on Rasmussen. For the same reasons I have discussed above with regard to why claim 1 would have been obvious based on Rasmussen, claims 14 and 15 would have been obvious. I can discern no meaningful distinction between the requirements of claims 14 and 15 and the teachings of Rasmussen. As discussed above in Section IV.B, side vents for pillows to provide for lateral ventilation have long been well known, the basic structure of a gusseted pillow having opposing top and bottom panels joined by a perimetric gusset has long been well known, it was known at least since 1960 to place vents into the gusset of such a pillow for lateral ventilation, it was known to place mesh vents, including 3D spacer fabric vents, into the sides of mattresses and cushions, to provide for lateral ventilation and cooling prior to the alleged '883 invention, and it was known prior to the alleged '883 invention to place 3D spacer fabric on pillow covers. A person of ordinary skill in the art, in light of this background of knowledge and prior art, reading the Rasmussen disclosure would have readily arrived at claims 14 and 15 without undue experimentation and with expected results. In light of this knowledge, it would have been obvious to a POSITA to utilize a gusset having a porosity greater than the porosity of the top and bottom panels to provide for lateral ventilation and

cooling, and, Rasmussen, at a bare minimum, provides an express motivation to do so. I am aware of no “secondary considerations” set forth in the list provided above in Section III.B that would suggest claims 14 and 15 were non-obvious. On the contrary, the consideration of “lack of independent simultaneous invention within a comparatively short space of time” suggests claims 14 and 15 were obvious. As I discussed above at the end of Section IV.B, I was personally working on pillows and mattresses using 3D spacer fabric sides to provide for lateral ventilation and cooling in the same timeframe as the alleged invention of the ‘883 Patent, and I never viewed the concept as inventive or proprietary. Instead, to me, it was an application of ordinary skill and common sense arising from the known applications of spacer fabrics in bedding and the known desire to provide for lateral ventilation in bedding products, especially those utilizing memory foam, which has a known tendency to accumulate heat, which can decrease comfort. Thus, in my opinion, claims 14 and 15 are also obvious in light of Rasmussen.

ix. Claim 17

151. I was asked to consider whether Rasmussen satisfies claim 17’s requirement of a “pillow as recited in claim 1, wherein at least one of said first panel and said second panel comprise a material selected from the group consisting of: a 100% polyester fabric, rayon, nylon, or a spandex-blend fabric.” It is my opinion that it does, at least with respect to Rasmussen’s cover 190. Rasmussen

expressly teaches to a person of ordinary skill in the art that the materials for the pillow cover 190 (which is understood to include its top 200 and bottom 210) can alternatively be “any synthetic and/or natural fabric, such as cotton, polyester, a cotton/polyester blend, wool, [etc.]”. Ex. 1006 at [0052]; Ex. 1007 at [0048]. A person of ordinary skill in the art reading this disclosure would understand the reference to “polyester” to be referring to “100% polyester” because this sentence separately describes a “cotton/polyester blend,” which would be understood by a person of ordinary skill to be less than 100% polyester. Because “polyester” is referred to by itself in juxtaposition to a polyester blend, a person of ordinary skill would understand this to be just polyester, i.e. 100% polyester, even though the percentage is not expressly listed. Thus, claim 17 is anticipated by Rasmussen.

152. I was also asked to consider whether claim 17 would be obvious in light of Rasmussen, for example, if Rasmussen were found to not expressly disclose 100% polyester for the first or second panel. It is my opinion that it, at a minimum, would have indeed been obvious. Rasmussen expressly suggests to a person of ordinary skill that “any sheet material desired, including without limitation any synthetic and/or natural fabric or cloth material” can be used and it expressly lists “polyester” by itself, in juxtaposition to a “cotton/polyester blend.” If this were somehow found to not expressly disclose 100% polyester, it, at a minimum, would strongly suggest to a person of ordinary skill in the art to use

100% polyester, which would have been an obvious design choice. 100% polyester has long been a common fabric to use on pillow covers (especially for its known ability to wick moisture) since well before the alleged invention.

153. Claim 17 would have also been obvious based on Rasmussen's teaching that the top and bottom panels of Rasmussen's cover 190 can be "stretch velour" (Ex. 1006 at [0050], Ex. 1007 at [0046]), which was widely known at that time in the industry to typically be formed from a spandex-blend fabric, i.e., usually about 1-2% of the fibers in the material are spandex fibers so as to create the "stretch" effect in stretch velour. Thus, Rasmussen's teaching of "stretch velour" for the first and second panels is highly suggestive of and would make it obvious for a person of ordinary skill in the art to use a "spandex-blend fabric" in the first and second panels, as recited in claim 17. Claim 17, therefore, is also obvious over Rasmussen, in my opinion, based at least on it being obvious to use 100% polyester and spandex-blend fabric as materials in the first and second panels.

x. Claim 18

154. I was asked to consider whether the gusset of Rasmussen's core and cover satisfied claim 18's requirement of "[a] A pillow as recited in claim 1, wherein said gusset is formed of an open cell construction, said open cell construction being formed by strands defining a mesh configuration." It is my

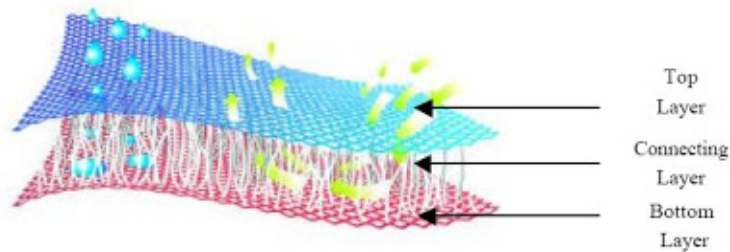
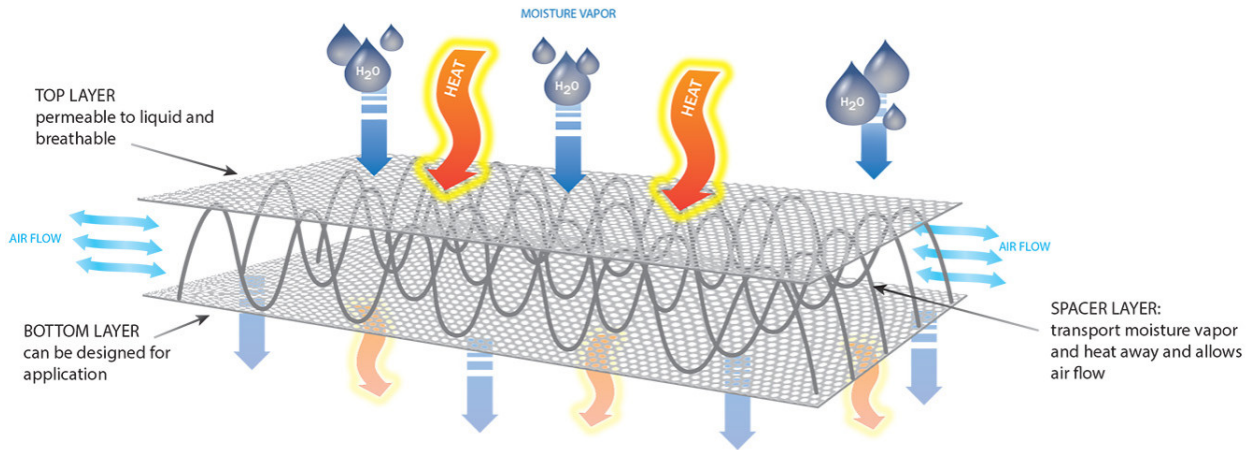
opinion that this requirement is satisfied with respect to both the core and cover.

First, as I have discussed above in Section IV.F.iii for claim 4, Rasmussen teaches that the gusset is formed of an open cell construction for both the core 110 and cover 190.

155. Second, with regard to the requirement of the open cell construction “being formed by strands defining a mesh configuration,” I note that the ‘883 Patent only uses the term “strands defining a mesh configuration” in claim 18, and the term “mesh” does not appear anywhere else in the patent. A person of ordinary skill in the art would not understand the ‘883 Patent to be attributing any special meaning to the term. Instead, the ‘883 Patent appears to merely be using a synonym to describe the various porous/breathable materials and structures described by the patent. I also note that the claim does not recite a “mesh fabric” per se, but rather requires “strands defining a mesh configuration.” Consistent with common definitions of the term “mesh,” a person of ordinary skill in the art would understand “strands defining a mesh configuration” to simply be a porous material made of a network of interlaced yarns or fibers. Ex. 1041, Oxford Dictionary (dictionary definition of “mesh” as “material made of a network of wire or thread” or “an interlaced structure”). As I have discussed above with respect to claim 4 in Section IV.F.iii, for both the core 110 and cover 190 of Rasmussen, Rasmussen teaches using a gusset comprised of “highly porous” “3D textile

material” (i.e., for sidewalls 160 of the core 110, and for side portions 220 of the cover 190). Ex. 1006 at [0029, 0049-0050]; Ex. 1007 at [0025, 0045-0046]. A person of ordinary skill in the art would understand this disclosure to be teaching a gusset comprised of a material made of a network of interlaced yarns or fibers, and thus “strands defining a mesh configuration.” The pores between the network of interlaced strands in the 3D textile that make it highly porous would be understood to skilled artisans to provide a breathable/porous mesh configuration. Both Rasmussen’s core and cover, therefore satisfy claim 18 from the perspective of a person of ordinary skill in the art.

156. In addition, it is also my opinion that Rasmussen teaches using 3D spacer fabric in the gusset for all of the reasons I have explained in paragraph 125 above. And, 3D spacer fabric would have been understood to comprise “strands defining a mesh configuration,” due both to the porous knitted structure used for the top and bottom layers of 3D spacer fabric, as well as due to the interconnecting monofilaments or yarns disposed between the top and bottom layers (all of which together provides a mesh configuration, as shown below)—I have discussed 3D spacer fabrics in more detail above in paragraphs 56-65.



See Section IV.B at paragraphs 56-65. Thus, Rasmussen anticipates claim 18 for this additional reason.

157. Further, even if I were to assume that Rasmussen did not disclose 3D spacer fabric, it is my opinion that it would, at a minimum, have nonetheless been obvious to utilize 3D spacer fabric in the gusset based on Rasmussen's teachings regarding the use of "highly porous" "3D textile material" in its gusset, for all of

the reasons I have set forth in paragraph 126 above. At a minimum, Rasmussen's teaching of using "highly porous" "3D textile material" would have been highly suggestive of using 3D spacer fabric and a person of ordinary skill would have had reason to use 3D spacer fabric, which was known to be used to provide for lateral ventilation in mattress covers and which was also known to be used in pillow covers, as I discussed in paragraphs 60-65 above. And, as discussed, 3D spacer fabric would provide "strands defining a mesh configuration" in the gusset to provide for the highly porous gusset in Rasmussen's core and cover to facilitate lateral ventilation. Thus, in my opinion, Rasmussen also renders obvious claim 18.

xi. Claim 20

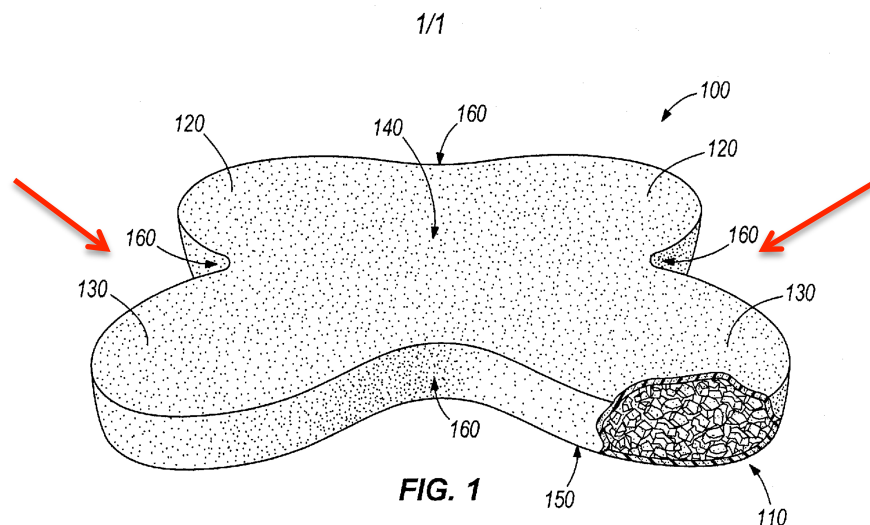
158. I was asked to consider whether Rasmussen satisfied claim 20's requirement of "[a] pillow as recited in claim 1, wherein said inner cavity is filled with a fill material configured to facilitate support of said pillow in a specific position of sleep." It is my opinion that Rasmussen teaches the limitations of claim 20. I note that claim 20 does not specify what particular sleep position the fill material must be configured to facilitate support of; instead, claim 20 merely requires that it facilitate support of any specific position of sleep. It is difficult, from the perspective of a person of ordinary skill in the art, to conceive of a bed/sleep pillow that would not have fill configured to support some specific position of sleep. The '883 Patent gives various examples of using fill materials of

different densities so as to accommodate, for example, “stomach sleeping,” “back sleeping,” or “side sleeping,” (Ex. 1001 at 3:39-49, 4:13-15) but claim 20 itself is not restricted to any particular sleep position. Pillows designed for specific sleep positions were known long before the alleged invention of the ‘883 Patent, and a person of ordinary skill in the art would have known that pillows could be designed with fill material having a varied level of firmness so as to provide for a desired elevation of the head and neck above the mattress surface.²⁹ The ‘883 Patent itself admits this fact when it states that “positional specific pillows have been heretofore devised and utilized for the purpose of supporting the head and neck of people.” Ex. 1001 at 1:27-29.

159. Rasmussen teaches the limitations of claim 20. Specifically, Rasmussen teaches that its pillow’s fill material, including core 110 (which contains filler material 180) can include “lobes 20, 30” to “enhance breathing of a user resting his or her head against the pillow 100 (e.g., when sleeping on the user’s side or stomach), and can also provide support for the shoulder and/or neck of the user when the user is sleeping on his or her side or back.” Ex. 1006 at [0014]; Ex. 1007 at [0010]. I also note that Rasmussen teaches over the course of

²⁹ For some examples, see Ex. 1019, *Hollander*, at 1:25-2:15, which discusses the need to provide for different pillow elevations above the mattress to accommodate stomach sleeping, back sleeping, and side sleeping, as well as Ex. 1058, U.S. Patent No. 4,349,925 to Macomber (1980) discussing a pillow designed to accommodate stomach sleeping.

several paragraphs that fill materials of varying densities/firmness (e.g., 50-300 N) and varying sizes can be used to provide “the desired characteristics of the pillow 100,” which would have been understood by a POSITA to be teaching fill material configurations that support various specific positions of sleep. Ex. 1006 at [0031]-[0044]; Ex. 1007 at [0027]-[0040]. Thus, a person of ordinary skill would understand Rasmussen to be teaching that its pillow has fill designed to support one or more specific positions of sleep. Further, I note that a person of ordinary skill in the art would understand that the lobed shape of Rasmussen’s pillow (as shown in Fig. 1 of Rasmussen) is designed to accommodate stomach sleeping, because the curved areas between lobes 20 and 30 on each side (shown below by red arrows) provide a place for the user to wrap their arms around the pillow to make it more comfortable for the user to sleep on their stomach. In addition, the curved area between the lobes 130 on the bottom also provide a space to accommodate the user’s neck and chest while in a stomach sleeping position.



The photographs below, which I accessed from the internet,³⁰ demonstrate this stomach sleeping position provided by this lobed design shown in Fig. 1 using Tempur's Ombracio pillow, which I believe to be a commercial embodiment of the Rasmussen reference:



A person of ordinary skill in the art would have understood from Rasmussen's description and Figure 1 that Rasmussen teaches a pillow having fill material configured to support a specific position of sleep, as required by claim 20.

160. In addition, Rasmussen teaches that its use of memory foam filler for the core allows for the pillow 100 to provide a soft, comfortable surface for a user's body that can conform to a user's body so as to distribute force applied by the user's body. Ex. 1006 at [0046]; Ex. 1007 at [0042]. Rasmussen teaches that this allows for the pillow 100 to provide support "while still conforming to a user's body (e.g., head and neck)" and allows for stress to be potentially reduced on the

³⁰ See <https://www.youtube.com/watch?v=ofMfu64ehWs> ; see also <http://au.tempur.com/pillows/ergonomic-support/ombracio-pillow-TAU2005M.html>

user's neck, face, or other portions of the user's head in contact with the pillow. Ex. 1006 at [0047]; Ex. 1007 at [0043]. In my opinion, Rasmussen would be understood by a person of ordinary skill in the art to have fill material configured to facilitate support of said pillow in a specific position of sleep, as required by claim 20.

161. While it is my opinion that Rasmussen anticipates claim 20, I was also asked to consider whether claim 20 would have also been obvious to a person of ordinary skill in the art based on Rasmussen. It is my opinion that it would have indeed been obvious. Persons of ordinary skill in the art were already well aware before the alleged invention that pillows could be designed with fill configured to support specific sleep positions. As I noted above, the '883 Patent acknowledges this fact in its background. Ex. 1001 at 1:27-29 ("positional specific pillows have been heretofore devices and utilized for the purpose of supporting the head and neck of people."). And, as I also noted above, it was already known by persons of ordinary skill in the art long before the alleged invention that pillows could be designed with fill material having a varied level of firmness so as to provide for a desired elevation above the mattress to accommodate different sleep positions, such as stomach sleeping, back sleeping, or side sleeping.³¹ Specifically, it was

³¹ For some examples, see Ex. 1019, *Hollander*, at 1:25-2:15, which discusses the need to provide for different pillow elevations above the mattress to accommodate stomach sleeping, back sleeping, and side sleeping, as well as Ex. 1058, U.S.

known in the prior art that the amount of elevation required for a pillow is affected by the user's sleep position—for example, it was known that stomach sleepers needed less head elevation, that back sleepers needed more elevation than for stomach sleepers, and that side sleepers needed even more head elevation—and it was known that fill for pillows could be configured to accommodate these different elevations.³² Rasmussen suggests using fill materials of varying densities/firmness (e.g., 50-300 N) and varying sizes to provide “the desired characteristics of the pillow 100,” which a person of ordinary skill in the art would have understood could be used to accommodate different specific positions of sleep. Ex. 1006 at [0031]-[0044]; Ex. 1007 at [0027]-[0040]. Given that Rasmussen teaches using these different fill configurations and given that it was known that varied fill configurations could be used to accommodate different sleep positions, it would have been obvious to a person of ordinary skill in the art from the teachings of Rasmussen and the knowledge of a person of ordinary skill in the art to design a pillow, as taught by Rasmussen, to support a specific desired sleep position, such as a stomach sleeping position. Further, Rasmussen provides an express suggestion to accommodate specific sleep positions when it refers to stomach sleeping, back sleeping, and side sleeping. Thus, a person of ordinary skill in the

Patent No. 4,349,925 to Macomber (1980) discussing a pillow designed to accommodate stomach sleeping.

³² Ex. 1019, *Hollander*, at 1:25-2:13, 2:15-3:19.

art would have had a credible reason to configure Rasmussen's fill material to support a specific sleep position. Claim 20, therefore, is obvious over Rasmussen, in my opinion.

G. Obviousness Based on Rasmussen and Doak

162. I was asked to analyze the disclosures of Rasmussen and U.S. Patent No. 3,109,182 to Doak ("Doak") (Ex. 1008), compare them to specific limitations of the '883 Patent, and conduct an obviousness analysis as outlined above in Section III. I was informed that Doak qualifies as prior art with regard to the '883 Patent under at least 35 U.S.C. § 102(b). Specifically, I was asked to opine on whether it would have been obvious to a person of ordinary skill in the art to combine Rasmussen with the pillow shape of Doak and whether a person of ordinary skill would have had a motivation or reason to do so. It is my opinion that a person of ordinary skill in the art would have had a motivation and reason to combine Rasmussen with Doak in this manner and it would have been obvious for them to do so.

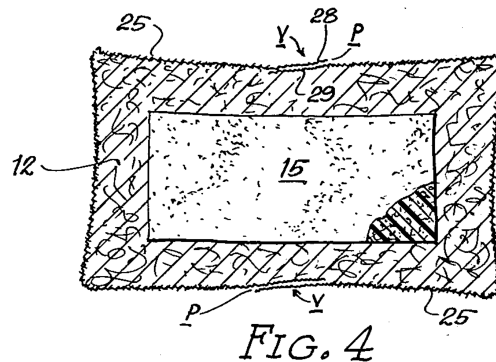
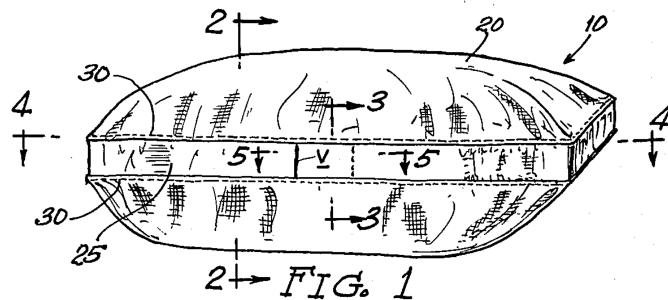
163. Doak teaches a pillow, which it says can be a "bed pillow," that has opposite top and bottom panels (i.e., a first panel (in yellow) and a second panel (in green)) that are joined and bounded by a perimetric gusset (shown in blue), as shown in the colored version of Figure 1 below. Ex. 1008 at Fig. 1, 1:63-67, 2:12-

165. The gusset of Doak “extends around the perimeter of the pillow.” *Id.* at 2:15-17, claim 4 (“a band extending around the periphery of the pillow and joining said face portions”). A person of ordinary skill in the art would understand that Doak’s gusset satisfies claim 2’s requirements of “a first end of said gusset engages said edge of said first panel such that said gusset extends continuously about an entire portion of the perimeter of the first panel; and a second end of said gusset opposite said first end engages said edge of said second panel such that said gusset extends continuously about an entire portion of the perimeter of the second panel.” This requirement is met because the top edge of Doak’s gusset engages Doak’s top panel on the top panel’s bottom edge, the bottom edge of Doak’s gusset engages Doak’s bottom panel on the bottom panel’s top edge, and Doak’s gusset extends continuously around the perimeter of the pillow. The generally rectangular perimeter of the outside edges of the first and second panels is aligned with the gusset.

166. For the same reason, a person of ordinary skill would also understand Doak’s gusset satisfies claim 3’s requirement of “a pillow as recited in claim 1, wherein said gusset perimetrically bounds said first and second panels.” The perimeter of the first and second panels aligns with the perimeter of the gusset.

167. Doak would also be understood by a person of ordinary skill in the art to have first and second panels each defining a generally rectangular footprint in

common with its gusset, as required by claim 5. As shown in the figures below, Doak's pillow is generally rectangular and the rectangular perimeter of the first and second panels is aligned with the gusset—thus, they share a common generally rectangular footprint. A person of ordinary skill in the art would also understand that Doak's first and second panels are arcuately bowed out in opposing directions, as required by claim 6 of the '883 Patent, because of the loft shown in the top and bottom panels (caused by the filling of the pillow). Ex. 1008 at Figs. 1,4.



168. I was also asked to consider whether Doak teaches claim 19's recitation of "[a] pillow as recited in claim 1, wherein said gusset comprises two longer longitudinal portions joined by two shorter end portions, the longitudinal portions being contiguous with the end portions."—and I was asked to assume that

this limitation did not require four separate pieces of material (i.e., two separate longitudinal portions and two separate end portions). Under that assumption, Doak teaches this limitation of claim 19, because it has a rectangular footprint and a gusset extending around the entire perimeter of this footprint—thus, Doak’s gusset has two longer longitudinal portions that are contiguous with two shorter end portions.³³

169. It would have been obvious to a person of ordinary skill in the art to combine Rasmussen and Doak by modifying the shape of the pillows taught by Rasmussen to utilize the shape taught by Doak, including Doak’s perimetric gusset joining and bounding its top and bottom panels, its rectangular shape, and its arcuately bowed out opposing top and bottom panels. The use of arcuately bowed out opposing top and bottom panels joined by a perimetric gusset that shares a rectangular footprint with the top and bottom panels is a basic pillow design that has been commonplace for at least decades, if not centuries, prior to the ‘883 Patent, as I have discussed above (see paragraphs 52 and 119 above) and as Doak itself demonstrates with its date (1963). It has long been commonplace in the industry well before the ‘883 Patent for bed pillows to be rectangular – that is the overwhelming majority of designs used. Opposing first and second panels being

³³ I was also asked to, alternatively, assume that claim 19 did require four “separate” portions, i.e., two separate longitudinal portions and two separate end portions. Under that assumption, claim 19 is obvious over Rasmussen in view of Burton, in my opinion, as I discuss below in Section IV.J.

arcuately bowed out has also long been commonplace in the industry – this is done to account for the compression of the pillow that occurs when the user rests their head, to provide for proper alignment of the spine. Joining top and bottom panels with a perimetric gusset has also long been used in the industry, both for aesthetic reasons (to include decorative fabric in the gusset, or pillow branding information) as well as for functional reasons, i.e., to allow for spacing between the top and bottom panels so that more fill material can be inserted and so that proper spine alignment can be achieved. See paragraphs 52 and 119, above. Thus, modifying the pillow of Rasmussen to have the shape characteristics of the pillow of Doak would have been a simple combination for a POSITA that would have yielded predictable results without requiring undue experimentation. A person of ordinary skill in the art would have had a credible reason to combine Rasmussen with Doak to use the shape of Doak to satisfy consumer expectations for a conventionally shaped pillow. Further, a person of ordinary skill would have also been motivated by Rasmussen’s suggestion of a “generally box-shaped core structure” (Ex. 1006 at [0017],[0029]) and Rasmussen’s Fig. 2 box-shaped cross section to modify its pillow to have the more conventional shape of Doak. A person of ordinary skill in the art would have also been motivated to combine Rasmussen and Doak based on their similarities, including the specific shared teaching of a pillow having opposing top and bottom panels joined by a gusset with pores/vents designed to

enhance lateral ventilation through the pillow. It would have been natural and an application of nothing more than ordinary skill and common sense for a skilled artisan to modify the pillow of Rasmussen with the shape characteristics of Doak. Further, I incorporate by reference my opinions above with regard to Rasmussen and the limitations it teaches for claim 1. See Section IV.F.i. Thus, in my opinion Rasmussen in view of Doak teaches all limitations of and renders obvious claims 1-3, 5-6, and 19.

H. Obviousness Based on Rasmussen and Mason

170. I was asked to analyze the disclosures of Rasmussen and U.S. Patent App. No. 2007/0246157 to Mason et al. (“Mason”) (Ex. 1012), compare them to the limitations of claim 12 of the ‘883 Patent, and conduct an obviousness analysis as outlined above in Section III. I was informed that Mason qualifies as prior art with regard to the ‘883 Patent under at least 35 U.S.C. § 102(b). It is my opinion that claim 12 would have indeed been obvious based on Rasmussen in view of Mason.

171. Mason describes a “support apparatus” with layers that may be made of various materials, including gel and foam. Ex. 1012 at [0008], [0014]. Mason specifically notes in numerous places that the support apparatus may be a “pillow” and specifically a “bed pillow.” *Id.* at [0014], [0043], [0057], [0058], and [0064]. The central teaching of Mason is the use of gel for providing a cooling effect to

enhance comfort, and specifically to use gel in combination with foam as a way to address the known problem of heat buildup in foam. *Id.* at [0002], [0005], [0008], [0009], [0041]-[0043]. Mason teaches numerous examples for its support apparatus, including that a gel layer 50 can be placed within a foam layer mold 60 and covered with a cover layer 62, as shown in Fig. 2 of Mason below. Ex. 1012 at [0080-0085]. As another example, Mason teaches that a cover layer can completely surround the gel layer. *Id.* Ex. 1012 at [0013], [0094-0095]. A person of ordinary skill in the art would understand Mason to be teaching that gel can be used as a part of foam fill material for support apparatuses that is enclosed within a cover, including for pillows (given that Mason teaches that the support apparatuses of the present invention can be for pillows). Thus, Mason teaches a fill material comprising a gel, as required by claim 12, and Rasmussen teaches the remaining limitations of claim 1 (as I have already set forth above in Section IV.F.i above).

172. The use of gel in fill material for mattresses and pillows, including infusing gel into foam filler to address heat build-up in foam was known prior to the alleged invention.³⁴ And, as Mason specifically teaches, “[i]n light of the desirable properties afforded by gel materials, it is not surprising that demand for

³⁴ See, for example, Ex. 1012, Mason, at [0041-0043]; U.S. Patent No. 8,512,854 to Fox et al. (filed Dec. 1, 2008) at 1:34-40 (describing need for heat dissipation in foam cores), 2:32-63 (describing use of an internal “gel-infused foam layer”), 3:23-38 (describing its invention can be used in “pillows”); U.S. Patent No. 8,307,482 to Gladney et al. (filed April 3, 2007) at 9:22-10:18 (describing infusing a viscoelastic foam core with a “polyurethane-based gel”), Fig. 5, 4:55-58 (describing its invention can be used in “pillows”).

support apparatuses comprising gels continues to increase.” Ex. 1012 at [0006]. It was known by persons of skill in the art that it was desirable to infuse memory foam with gels to address heat build-up and its use was increasingly common prior to the alleged invention.

173. A person of ordinary skill in the art would have had a credible reason to combine Mason’s teaching of including gel in foam filler material with Rasmussen’s viscoelastic foam core and fill material, especially given Rasmussen’s stated desire to enhance cooling in its pillow (Ex. 1006 at [0022]; Ex. 1007 at [0018]). It would have been obvious design choice to a person of ordinary skill to use gel in Rasmussen’s foam core and filler given its known use to address heat build-up in foams prior to the alleged invention, and as noted, gels were becoming increasingly demanded in mattresses and pillows prior to the alleged invention. A person of ordinary skill at the time of the ‘883 Patent would have appreciated that the thermal conductivity and enhanced comfort described by Mason would have been beneficial in Rasmussen’s pillow. Use of fill material comprising gel in the pillow taught by Rasmussen would have yielded predictable results with little or no experimentation. Therefore, in my opinion, claim 12 would have been obvious over Rasmussen in view of Mason.

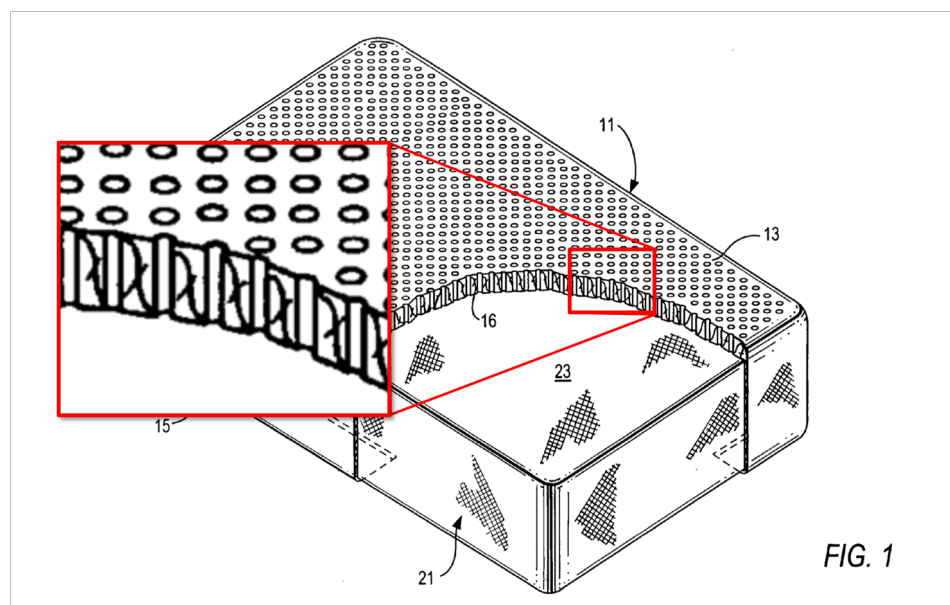
I. Obviousness Based on Rasmussen and Schlusel

174. I was asked to analyze the disclosures of Rasmussen and U.S. Patent Application Publication No. 2007/0261173 to Schlusel (“Schlusel”) (Ex. 1009), compare them to specific limitations of the claims of the ‘883 Patent, and conduct an obviousness analysis as outlined above in Section III with regard to claims 1, 4, 14-15, and 18. I was informed that Schlusel qualifies as prior art with regard to the ‘883 Patent under at least 35 U.S.C. § 102(b). Specifically, I was asked to opine on whether it would have been obvious to a person of ordinary skill in the art to combine Schlusel with Rasmussen by using 3D spacer fabric, as used in the mattress pad of Schlusel, for the “highly porous” “3D textile material” forming the gusset of the pillow in Rasmussen (i.e., for the sidewalls 160 of core 110 and for the side portion 220 of cover 190) and whether a person of ordinary skill would have had a motivation or reason to do so. It is my opinion that a person of ordinary skill in the art would have had a motivation and reason to combine Rasmussen with Schlusel in this manner and it would have been obvious for them to do so.³⁵ Thus, as I set forth below, it is my opinion that claims 1, 4, 14-15, and 18 would have been obvious over Rasmussen in view of Schlusel.

³⁵ As I have discussed in several sections above, it is my opinion that Rasmussen itself teaches and thus anticipates 3D spacer fabric and that it would have also been obvious to a person of ordinary skill in the art to use 3D spacer fabric based on Rasmussen alone, in view of the knowledge and experience of a person of ordinary skill in the art. See, e.g., paragraphs 125-126. Nonetheless, I was also asked to provide this alternative obviousness analysis based on the combination of Rasmussen and Schlusel, as well.

175. Schlussek teaches that spacer fabric “has three parts or components knitted together to form a fabric with two breathable outer fabric layers and a breathable cushioned middle defined by yarns interconnecting the two layers.” Ex. 1009 at ¶ [0007]. Schlussek also teaches that spacer fabric is “highly breathable,” that its outer fabric layers can be “mesh,” “that spacer fabrics and their manufacture are well known in the art, and various type of interconnecting yarn can be used, such as polyester, nylon, spandex, or others. *Id.* at ¶ [0016,0020,0021]. Schlussek also teaches that spacer fabric can be used to provide breathability and ventilation in bedding materials because it uses spacer fabric to provide a breathable/ventilated infant mattress pad. The annotated version of Fig. 1 of Schlussek below shows the spacer fabric layer 16, with its highly breathable structure, forming the top of its infant mattress pad.

Schlussek (Fig. 1, annotated)



176. Rasmussen and Schlusssel would be considered as being in the same field of endeavor and as being analogous art to the '883 Patent given that they are both directed towards utilizing breathable porous 3D textiles in bedding to enhance ventilation.

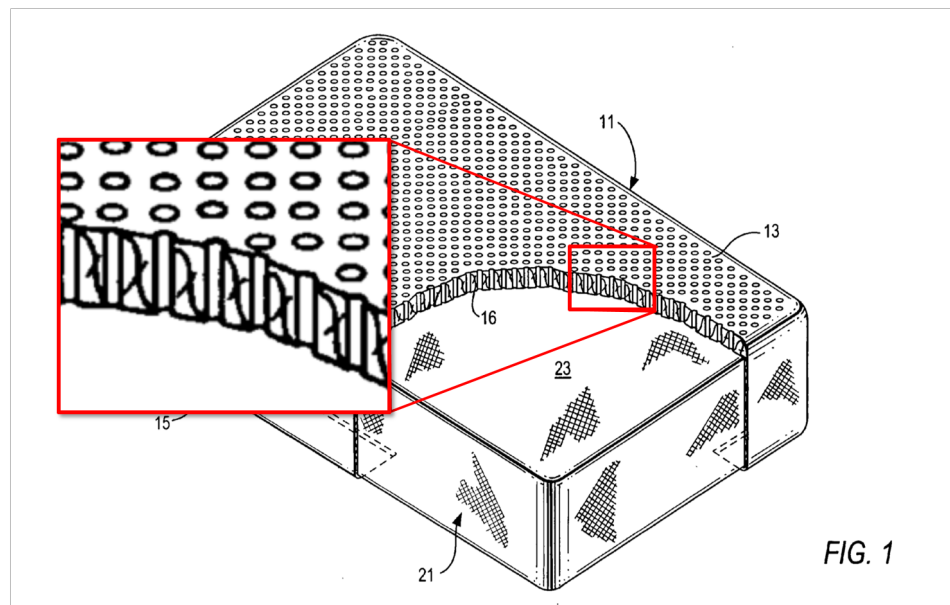
177. A person of ordinary skill in the art would have been motivated to combine Schlusssel's spacer fabric into the gusset of Rasmussen (i.e. both its core gusset, i.e. sidewalls 160, and its cover gusset, i.e. side portion 220) based on Rasmussen and Schlusssel's common teaching of 3D textile incorporated to provide breathability and ventilation in bedding. Ex. 1006 at [0049]; Ex. 1007 at [0045]; Ex. 1009 at [0011], [0016]-[0017], Abstract. 3D Spacer fabric was well-known at the time of the '883 patent to be a porous, breathable material that would allow the ventilation and heat transfer in bedding materials, including in mattresses and pillow covers prior to the alleged invention. Ex. 1009 at [0016]; Ex. 1006 at [0029,0049]; Ex. 1007 at [0025,0045]; *see* paragraphs 56-65 in Section IV.B above. Further, Schlusssel expressly teaches that 3D spacer fabric may have multiple layers, and that these layers may be mesh. Ex. 1009 at [0007,0016,0020]. A person of ordinary skill would have understood that the 3-dimensional spacer fabric taught by Schlusssel would have been well-suited for providing the "highly porous" "3D textile material" of Rasmussen's sidewalls 160 and side portions 220, improving the pillow's ventilation and cooling. Ex. 1006 at [0029,0049]; Ex. 1007

at [0025,0045]. Thus, Rasmussen itself, in my opinion, also provides an express motivation and suggestion to use 3D spacer fabric, such as that taught by Schlusssel, in the gusset of Rasmussen. It would have been natural and an application of nothing more than ordinary skill and common sense for a person of ordinary skill to modify the pillow of Rasmussen such that its gusset would utilize the 3D spacer fabric of Schlusssel.

178. I incorporate by reference my opinions above regarding Rasmussen and the limitations it teaches with respect to claims 1, 4, 14-15, and 18. See Sections IV.F.i, IV.F.iii, IV.F.viii, & IV.F.x above.

179. Further, as I have discussed above with respect to claims 4, 14-15, and 18, in my opinion, 3D spacer fabric satisfies the requirements of an “open cell construction,” assuming that the ‘883 Patent’s definition of that term is applied. See Sections IV.F.iii, IV.F.viii & IV.F.x. And Schlusssel expressly acknowledges the “highly breathable” nature of 3D spacer fabric, which Schlusssel utilizes to enhance mattress ventilation for infants. Ex. 1009 at [0007,00016,0020]. Thus, incorporating Schlusssel’s 3D spacer fabric into the gusset of Rasmussen satisfies the requirement of a gusset formed of an open cell construction, as required by claims 4, 14-15, an 18. Further, Schlusssel also satisfies claim 18’s requirement that the open cell construction be formed by “strands defining a mesh configuration.” As I discussed above with regard to claim 18, a person of ordinary

skill in the art would understand 3D spacer fabric to satisfy this requirement. See Section IV.F.x above. In addition, Schlüssel expressly teaches 3D spacer fabric having “mesh” outer fabric layers and “knitting the fabric to have a desired mesh size of between about 200 microns and 0.5 inches.” Ex. 1009 at [0016,0020]. This mesh arrangement is also graphically depicted in Figure 1 (annotated) shown below.



Thus, Rasmussen in view of Schlüssel teaches and renders obvious claims 1, 4, 14-15, and 18.

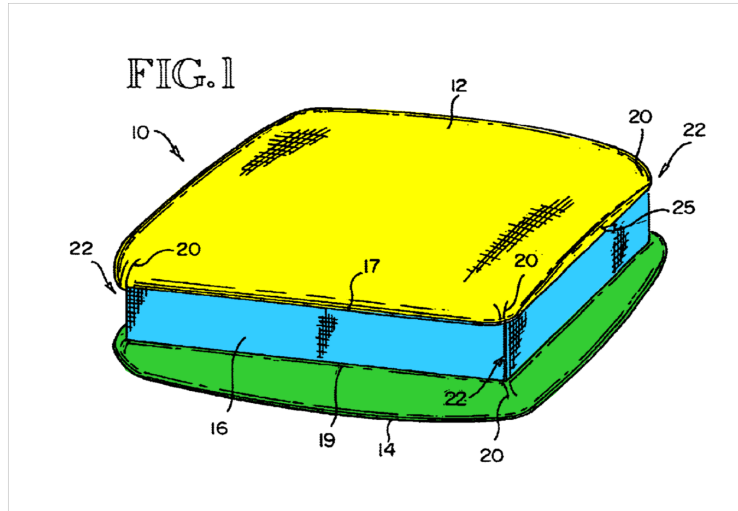
J. Obviousness Based on Rasmussen and Burton

180. I was asked to analyze the disclosures of Rasmussen and U.S. Patent No. 6,760,935 to Burton et al. (“Burton”) (Ex. 1013), compare them to specific limitations of the claims of the ‘883 Patent, and conduct an obviousness analysis as outlined above in Section III with regard to claim 19. I was informed that Burton

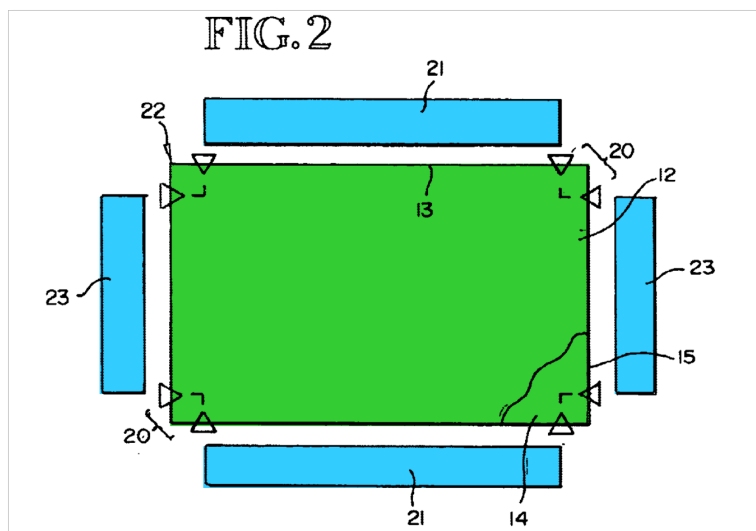
qualifies as prior art with regard to the '883 Patent under at least 35 U.S.C. § 102(b).

181. Specifically, I was asked to assume that claim 19's recitation of "[a] pillow as recited in claim 1, wherein said gusset comprises two longer longitudinal portions joined by two shorter end portions, the longitudinal portions being contiguous with the end portions" required four separate pieces of material (i.e., two separate longitudinal portions and two separate end portions) that are joined and with the end portions being contiguous with the longitudinal portions. Burton would be understood by a person of ordinary skill in the art to satisfy this limitation under this assumption.

182. I have discussed Burton above in Section IV.A because it was cited during prosecution of the '883 Patent and its parent '134 Patent. I also discussed it above as being an example of the well known nature of pillows designed to have opposing top and bottom panels joined by a perimetric gusset. Specifically, Burton teaches a top fabric section 12 and bottom fabric section 14 that are joined by a perimetric gusset 16, as shown in the color-coded version of Fig. 1 below. Ex. 1013 at 1:66-2:5; Fig. 1. The top fabric section 12 is sewn to the upper edge 17 of the gusset 16, and the bottom fabric section 14 is sewn to the lower edge 19 of the gusset 16. Ex. 1013 at 2:25-30.



While Burton teaches that “[t]ypically, the gusset portion 16 is a continuous strip,” Burton also depicts an example where the gusset is “in individual parts in Fig. 2 to match the four sides of the top and bottom sections.” *Id.* at 2:15-23. Specifically, Burton teaches the gusset can be comprised of four separate parts: two length parts 21 joined to and contiguous with two width parts 22, as shown in the color-coded version of Fig. 2 below.



Burton also states, “In the embodiment shown, the pillow length parts **21** of the gusset are approximately 22 inches (with a 0.5 inch seam allowance) and the pillow width parts **23** of the gusset are 16 inches (with a 0.5 inch seam allowance), for a total gusset length of 76 inches.” *Id.* at 2:19-23. A person of ordinary skill in the art would understand Burton to be describing four separate pieces of fabric given that there are 0.5 inch “seam allowances” reported by Burton for each of the four parts. Thus, in my opinion, Burton satisfies claim 19’s limitation under the assumption stated above. And when combined with Rasmussen’s teachings for claim 1, as I have set forth in Section IV.F.i above, Rasmussen in view of Burton teaches all limitations of claim 19.

183. A person of ordinary skill in the art would have found it obvious and had reason to use Burton’s basic rectangular gusseted pillow design, which has long been a well known and common pillow design in the industry (as discussed in paragraphs 52 and 119 above) for the shape of Rasmussen’s pillow to arrive at a gusset having two separate longitudinal portions joined and contiguous with two end portions, as required by claim 19 (under the assumption I stated above). It would have been obvious for the same reasons I already stated in paragraph 119, including, for example, that many consumers would prefer the more conventional and common pillow shape formed by rectangular top and bottom panels joined by a perimetric gusset. It is also my opinion that it would have been an obvious and

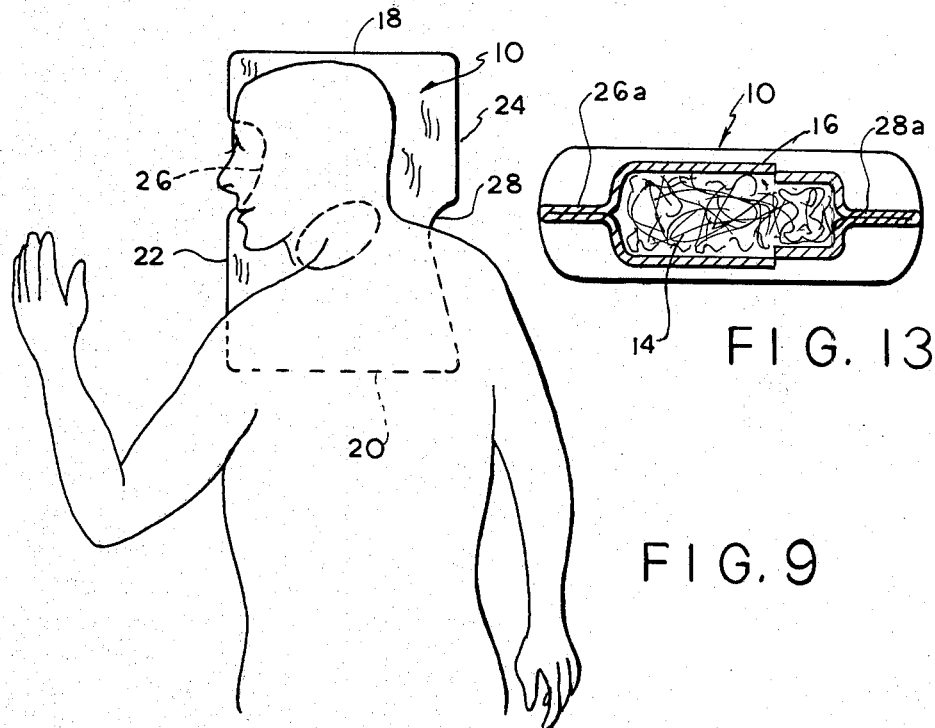
routine design choice to decide whether to use a gusset formed of a single continuous strip (joined at a single seam) or to use four separate strips joined at four seams. A pillow designer would have a finite set of known options available to them in deciding the number of separate pieces of fabric to use to form the gusset, and it would have been a routine design choice to make. For example, a pillow designer of ordinary skill would have known that four separate seams located at, for example, the corners of the pillow, would allow for sharper (i.e. closer to 90 degrees) corners, which would make it beneficial for a designer looking to use “cleaner” edges in their pillow design. Thus, in my opinion, it would have been obvious to a person of ordinary skill to use two separate longer longitudinal pieces joined to and contiguous with two separate shorter end pieces to form the gusset, as taught by Burton, for the gusset of Rasmussen, rendering claim 19 obvious.

K. Obviousness Based on Rasmussen and Macomber

184. I was asked to analyze the disclosures of Rasmussen and U.S. Patent No. 4,349,925 to Macomber (“Macomber”) (Ex. 1058), compare them to claim 20 of the ‘883 Patent, and conduct an obviousness analysis as outlined above in Section III. I was informed that Macomber qualifies as prior art with regard to the ‘883 Patent under at least 35 U.S.C. § 102(b). Specifically, I was asked to consider whether it would have been obvious to a person of ordinary skill in the art to

combine Macomber's teaching of a pillow having fill material configured to facilitate sleeping in a prone position (i.e., stomach sleeping) with Rasmussen's pillow to arrive at the pillow claimed in claim 20 of the '883 Patent (i.e., "[a] pillow as recited in claim 1, wherein said inner cavity is filled with a fill material configured to facilitate support of said pillow in a specific position of sleep"). It is my opinion that it would have indeed been obvious.

185. Macomber states that its invention "relates to a pillow so designed as to allow a person to sleep comfortably in a prone position." Ex. 1058 at Abstract. Macomber's pillow has a cushion 10 comprised of a cover 16 filled with stuffing 14 (shown in Fig. 13 below) of a soft, yieldable material that can, for example, be a synthetic material, such as foam, and the cushion has a "head edge 18" and a "chest edge 20" as shown in Fig. 9 below. Ex. 1058 at 2:33-50. The head and chest edges are connected by two side edges, i.e. "a face edge 22" and a shoulder edge 24" to facilitate lying in a prone position (i.e., on the user's stomach) with the user's head turned towards the face edge as shown in Fig. 9. Ex. 1058 at 2:50-58. The face edge has a recess 26 shaped to provide clearance for an eye and the nose of the user, and the shoulder edge has a recess 28 shaped to provide shoulder clearance. Ex. 1058 at 2:64-3:29. The shape of Macomber's pillow is intended to allow a person to sleep comfortably in a prone position. Ex. 1058 at Abstract, 3:12-17; 5:62-67.



Macomber, thus, teaches to a person of ordinary skill in the art a pillow having an inner cavity (i.e., inside cover 16) filled with a fill material (stuffing 14) that is configured to facilitate support of the pillow for sleeping in the prone position (on the stomach), i.e. a specific position of sleep, as required by claim 20.

186. It would have been obvious to a person of ordinary skill in the art to combine Rasmussen's pillow with a pillow having fill configured for a specific sleep position, such as Macomber teaches, by modifying Rasmussen's lobed shape to conform to the specific lobed shape taught by Macomber to provide a pillow configured for sleeping in a prone position. Rasmussen expressly teaches that its lobes 120, 130 "provide a number of support surfaces for a user," can be "the same or different size," and "can be equally or unequally spaced about the periphery of

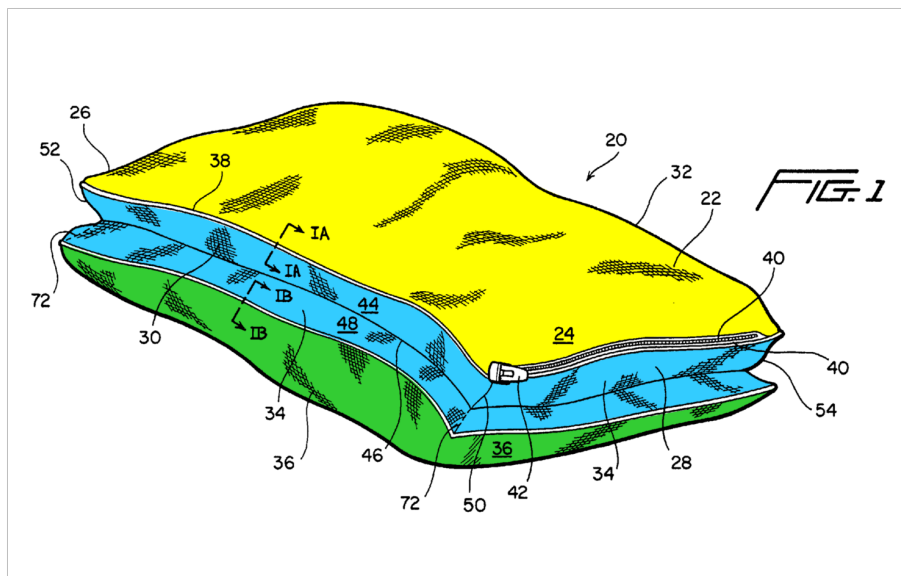
the pillow 100.” Ex. 1006 at [0014]; Ex. 1007 at [0010]. Rasmussen also expressly teaches that its lobed shape can enhance breathing of the user when the user is sleeping on the user’s side or stomach. Ex. 1006 at [0014]; Ex. 1007 at [0010]. A person of ordinary skill would have been motivated and had reason to combine Rasmussen and Macomber in this manner because Rasmussen and Macomber teach pillows having a similar lobed shape, Rasmussen expressly states that its lobes could be unequally spaced and sized (like the lobes in Macomber), and, as admitted by the ‘883 Patent, pillows designed to support a specific position of sleep were already well known in the prior art (Ex. 1001 at 1:27-29)—indeed, they had long been well known, as the 1980 filing date of Macomber demonstrates. In my opinion, therefore, claim 20 of the ‘883 Patent would have been obvious to a person of ordinary skill in the art based on Rasmussen in view of Macomber.

L. Obviousness Based on Rasmussen and Schecter

187. I was asked to analyze the disclosures of Rasmussen and U.S. Patent No. 6,988,286 to Schecter et al. (“Schecter”) (Ex. 1011), compare them to claim 17 of the ‘883 Patent, and conduct an obviousness analysis as outlined above in Section III. I was informed that Schecter qualifies as prior art with regard to the ‘883 Patent under at least 35 U.S.C. § 102(b).

188. As shown in the color-coded version of Figure 1 below, Schecter generally teaches a pillow having a cover 22 that is comprised of a first panel (top

layer 24) (yellow) and second panel (lower bottom layer 36) (green) joined by a gusset (gusset zone 34) (blue) that extends around the entire perimeter of the panels. Ex. 1011 at 3:41-4:10, Fig. 1. Schecter's pillow can include a visco-elastic foam (i.e., memory foam) core. Ex. 1011 at 2:11-13, 7:41-8:15. As can be seen, Schecter is in the same field of endeavor as and thus would be viewed as analogous art to the '883 Patent.



189. Schecter teaches the use of “rayon” as an example of material that can be used in its “breathable fabric” pillow cover, which satisfies claim 17’s requirement of “wherein at least one of said first panel and said second panel comprise a material selected from a group consisting of: . . . rayon” Specifically, Schecter teaches that its cover 22 (which includes its top and bottom panels) can comprise “a breathable fabric such as cotton (e.g., 100% or mixtures with other materials such as polyester or rayon),” which would be a description

consistent with materials commonly used for pillow covers (both at that time and today). Ex. 1011 at 3:30-35.

190. I do not see that Rasmussen explicitly describes using rayon for the top or bottom panel of either its core 110 or its cover 190. However, it is my opinion that it would have nonetheless been obvious to a person of ordinary skill to use rayon in light of Rasmussen's express motivation to use alternative materials in cover 190 (which includes its top portion 200 and bottom portion 210) including "any sheet material desired, including without limitation any synthetic and/or natural fabric or cloth material." Ex. 1006 at [0052]; Ex. 1007 at [0048]. This teaching of Rasmussen would have prompted a person of ordinary skill to use any number of well known synthetic and natural fabrics commonly used in pillow covers, including rayon, such as taught for the "breathable fabric" in the top and bottom panels of Schecter's gusseted pillow. Rayon was a well known material for use in pillow covers well before the alleged invention.³⁶ A pillow designer of ordinary skill would have had reason to and found it obvious to use rayon as a breathable fabric in the top and bottom panels, as taught by Schecter, in light of rayon's common use in pillow covers at that time as well as rayon's known advantages for pillows at that time, including rayon's softness and comfort,

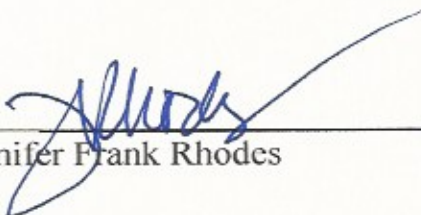
³⁶ See, for example, U.S. Patent No. 2,357,789 to Levy (filed June 30, 1942) at 2:15; U.S. Patent No. 3,162,868 to Cramer (filed Oct. 10, 1962) at 1:50; U.S. Patent Application Publication No. 2007/0220678 to Ciliento (filed Mar. 21, 2007) at [0019]; U.S. Patent No. 8,595,872 to Tidwell (filed July 17, 2006), at 2:5, 2:63.

durability, and relatively low cost. Thus, a person of ordinary skill would have appreciated that it would be desirable and beneficial to use rayon in the top or bottom panels of Rasmussen's pillow cover, and it would have been nothing more than a routine design choice of using a material commonly used in pillow covers. Claim 17, therefore, would have been obvious to a person of ordinary skill in the art based on Rasmussen in view of Schecter in my opinion.

V. CONCLUSION

191. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: 4/30/18

By: 
Jennifer Frank Rhodes