

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FIRST QUALITY RETAIL SERVICES, LLC,
FIRST QUALITY CONSUMER PRODUCTS, LLC,
FIRST QUALITY PRODUCTS, LLC
FIRST QUALITY ENTERPRISES, LLC,

Petitioners,

v.

ESSITY HYGIENE AND HEALTH AB.

Patent Owner

CASE: IPR2024-01487

U.S. PATENT NO. 9,308,138

**EXPERT DECLARATION OF DONALD SHELDON REGARDING
CLAIMS 1-5, 7-8, 20-22, AND 24-25 OF U.S. PATENT NO. 9,308,138
(EX2001)**

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I. INTRODUCTION

1. I submit this declaration in connection with Patent Owner's Preliminary Response in the *Inter Partes* Review IPR2024-01487 (the "IPR") of claims 1-5, 7-8, 20-22 and 24-25 ("challenged claims") of U.S. Patent No. 9,308,138 (the "'138 patent," Ex. 1001). I have been retained by Dechert LLP, counsel for Patent Owner Essity Hygiene and Health AB in this matter. I am being compensated for my time at my standard rate of \$400 per hour plus actual expenses. The opinions in this declaration are my own, and my compensation is not dependent in any way upon the outcome of the IPR of the '138 patent.

II. PROFESSIONAL QUALIFICATIONS

2. I have nearly 50 years of experience in developing, designing, and manufacturing absorbent consumer products, including infant diapers, incontinence pads, feminine hygiene products, and absorbent underwear. I have led research and development initiatives at Covidien/Tyco, Confab, Kimberly-Clark, and Johnson & Johnson.

3. Attached as Exhibit 2002 is my curriculum vitae, which summarizes my background, credentials, and relevant industry experience.

4. I am a scientist that has worked in the nonwoven and absorbent technology field for approximately 50 years, on the product side, the process side, and with nearly all materials used in such products. More specifically, I have

worked in the consumer products and medical device fields, covering body fluid collection devices and technologies employed therein, with an emphasis on development, engineering, and commercialization of baby diapers, adult incontinence products, sanitary napkins and tampons. I have trained hundreds of scientists in the field, including some of the inventors named on patents relied upon by Petitioners. I graduated from Western New England University in 1972 with a Bachelor of Science Degree.

5. For approximately seven years (until 2020), I was the Chief Technology Officer at Advanced Absorbent Technologies, where I created and patented a novel disposable absorbent product with various layers of nonwovens encapsulating super absorbent polymers in a synthetic absorbent core for superior fluid management. The Business and Technology focus of Advanced Absorbent Technologies was to improve the absorbency, comfort, dryness, thinness and reduce the urine odor inherent in adult incontinence products through novel approaches to fluid management. With the stringent controls stemming from the COVID-19 pandemic implemented by federal and state government, our start-up company, which employed outsourced manufacturing, was forced into dissolution.

6. Since 2008, I have been the principal of DAS Consulting, which provides technical leadership consulting for new business start-ups and support for

existing businesses. I have also acted as a technical expert in several patent and technology related lawsuits.

7. For approximately ten years (from 1998-2008), I was the Vice President of Research and Development and Executive Board member of the Retail Team for Covidien, Tyco Healthcare, and Kendall Retail Group, where I directed all aspects of research and development for feminine hygiene and sanitary pads, adult incontinence products, infant diapers, and infant training pants for their Retail, Institutional and International Business. During that period, my team filed over 300 patent applications relating to materials, product design, and processes. At least 99 of these applications were issued as patents. I was also one of ten top senior R&D Vice Presidents interfacing with other departments to provide additional technical critique regarding each other's new products. This included interfacing about Foley catheters, advanced wound care, various surgical devices and sharing my expertise in body fluid absorbency, mechanics, and technology. The latter resulted in a unique absorbent core created specifically for the disposable Sharps Needle containers to absorb blood and other fluids.

8. From 1995 to 1998, I was the Vice President of Research & Development for Confab, where I created and implemented a product development process for improved sanitary pads and incontinence products. I also developed their new Baby Diaper program, selecting equipment, developing and selecting

materials, and finalizing the product design to be competitive in the market. I also worked closely with Marketing and Sales to assist in developing successful market introduction programs for these products.

9. For approximately fifteen years (1980-1995), I was a Research Manager for Kimberly-Clark, where I created new and improved products, including material and process improvements to their existing Feminine Hygiene Sanitary Napkin lines. I redesigned and consolidated equipment for ease of manufacture and obtained new improved materials for better performance and cost management. I also created a new feminine care tampon business that included the plastic KOTEX Natural Curved® Tampons, and where I developed a new three-dimensional curved injection molding and profile extrusion technology. I further developed a more cost-effective plastic KOTEX Security® Tampon. In addition, I created and patented a fully flushable thermally formable paper tampon outer applicator tube. I also led and supported Kimberly-Clarks' international digital tampon programs along with their cosmetic wipe business. In 1994, I created and led a 3-day Material Science Technical conference for over 100 K-C employees, taught by a team of internal experts including PhD's in material science, process engineering and consumer testing. This conference focused on material properties of absorbent products such as tensile strength, elasticity, and properties such as fluid absorption rates, rewets and retention, covering not only Kimberly-Clark

products but many competitive absorbent products. The technical conference and exchange also covered how to process said materials and performance when compiled into a product. As a result of this work, we increased the development of new and improved products. I was recognized and awarded the Kimberly-Clark Distinguished Performance Award, which is very infrequently awarded, usually less than once per year.

10. From 1975 to 1990, I was a Product Development Scientist for Johnson & Johnson, where I developed a new Class 2 medical device, and I re-engineered a new injection molding process. I further created a new short-fiber superabsorbent application process and a novel tampon tube wrapping process. In addition, I assisted with the development of the first thin sanitary napkin “Stayfree Sure & Natural,” which was the first sanitary napkin that utilized super absorbent materials.

11. From 1973 to 1975, I was a research scientist at Arkema Pennwalt, where I supervised three application, testing, and formulation laboratories. There, my teams developed, synthesized, and tested chemical treatments for textiles and nonwovens such as water repellent, soil resistant, flame retardant and smoke suppressing materials and technologies.

12. From 1972 to 1973, I was a scientist at Kendall Nonwovens, where I developed and commercialized nonwovens textiles for flushable diaper liners,

wipes, and dairy filters, among other products. Some of these materials were used as interlining in clothing, especially for suit collars. As such, they were designed to be water repellent and water resistant and have a specific targeted stiffness to prevent collapse during use. I supported the development of the first thermo-bonded nonwovens used for electrical tape backing for GE for the US Space Program.

13. I am a named inventor on 32 issued patents, twenty of which apply to the absorbent product industry.

14. I have completed and am certified at the “Black Belt Level for Design for Six Sigma,” an industry-recognized two-year program, equivalent to a master’s degree in business statistics.

15. I am a 2007 Visionary Winner for best new product and best use of nonwoven materials for a unique nonwoven elastic side panel for training pants and swim pants. I was also a Finalist and runner-up to the 2005 Visionary Winner for a novel absorbent core technology used in training pants. I have been a frequent speaker and presenter on scientific topics relating to product development in the areas that I have discussed above.

16. For the last 50+ years, therefore, my work experience has largely related to body fluid leakage and management and related products and devices. This has included experience and knowledge of the construction and testing of

such products and devices as well as the materials used with them. Further, I have invented and performed various absorbency tests including absorbent capacity; retained absorbent capacity; absorbency rate; rewetting a measure for dryness measuring; wicking testing; fluid measurement and migration testing; and many other tests utilized in the absorbent products industry.

17. I have dissected and profiled products, both in total and on a layer-by-layer basis to measure their performance properties such as: fluid transfer rates, retained absorbency in each layer, and the ability of one layer to wick to another layer (or not). I have utilized such information to aid me and my teams in developing new and improved absorbent products. As the result of all my experiences and industry learnings, I believe that I am qualified as an expert to provide opinions with respect to the '138 patent and other patents and publications discussed herein.

III. MATERIALS CONSIDERED

18. My analysis is based on my years of education, research, experience, and background, as well as my investigation and study of relevant materials for this declaration. When developing the opinions set forth in this declaration, I was asked by counsel to assume the perspective of a person having ordinary skill in the art ("POSA"). In forming my opinions, in addition to the Petition, I reviewed and

considered the materials identified in the list below as well as any additional materials cited in my Declaration.

Exhibit	Description
1001	U.S. Patent No. 9,308,138 (Andersson) Exhibit 1001
1002	Expert Declaration of Dr. Behnam Pourdeyhimi Regarding Claims 1-5, 7-8, 20-22 and 24-25 of U.S. Patent No. 9,308,138
1003	File History of U.S. Patent No. 9,308,138
1004	International Patent Publication No. WO2009067059A1 (Bergstrom)
1005	U.S. Patent No. 9,066,837 (Kim)
1006	U.S. Patent No. 6,455,753 (Glaug)
1007	U.S. Patent No. 7,956,236 (Ponomarenko)
1008	Japanese Patent Publication Number JP 2008-284190 A (Nakazawa)
1009	C F White, Engineered structures for use in disposable incontinence products, 2003
1010	J.R. Ajmeri and C.J. Ajmeri, Nonwoven personal hygiene materials and products, 2010
1011	Bhupender S. Gupta, Nonwovens in Absorbent Materials, 2002 Exhibit 1011
1012	Kirstin Kosemund et al., Safety evaluation of superabsorbent baby diapers, 2009
1013	Docket Navigator Statistics on Delaware Trials
1014	Essity Hygiene and Health AB, Essity HMS North America Inc. v. First Quality Products, Inc. et al., Case No. 1:24-cv-00374, Complaint for Patent Infringement (D. Del. Mar. 22, 2024)
1015	U.S. Patent No. 7,923,597 (Ponomarenko-597)
1016	U.S. Patent Application Publication No. 2005/0267429A1 (Cohen)
1017	F. Wiesemann and R. Adam, Handbook of Medical Textiles, Chapter 14 - Absorbent products for personal health care and hygiene, 2011
1018	Colin F. White, International Nonwovens Technical Conference,

Exhibit	Description
	Developments in Absorbent Products and Their Impact on the Nonwovens Industry, 2000
1019	European Patent Specification EP 0701805 B1(Yang)

IV. THE LEVEL OF ORDINARY SKILL IN THE ART

19. I have been informed the validity of a patent’s claims is analyzed from the perspective of the POSA in the relevant field at the time of the effective filing date of the ’138 patent, which was June 28, 2011. I understand that the Petition and Pourdeyhimi Declaration applied the following definition for the POSA in their analyses:

A person of ordinary skill in the art (“POSITA”) at the relevant times, would have had (1) a degree or certificate in chemical engineering, chemistry, paper engineering, materials science, biology or a related field; and (2) two to four years of work experience in product design and testing of disposable absorbent articles, such as diapers, sanitary napkins and incontinence pads. Less work experience may be compensated by a higher level of education, and vice versa.

Petition, 17-18 (citing Pourdeyhimi Declaration, ¶¶ 26-28).

20. Dr. Pourdeyhimi misses a critical element regarding the knowledge and experience of a POSA. While he appropriately identifies “two to four years of work experience in product design and testing,” he fails to identify what that work experience entails. In my opinion, a POSA’s “work experience” must include a fundamental understanding and training about the interrelationship of the

components and the materials in an absorbent article. A POSA should have knowledge of the material properties, the converting equipment involved in making absorbent articles, an understanding of how the materials and components are handled in practice, and how these materials are integrated into the converting process in which these absorbent products are assembled. A POSA should also understand the industry fundamental test methods and how to interpret the data generated by these methods, when testing both the raw materials and these components themselves and when testing a complete product.

21. For this Declaration I will apply the same POSA definition as applied by Petitioners and Dr. Pourdeyhimi, while reserving the right to challenge this definition later.

V. SUMMARY OF MY OPINIONS

22. First, it is my opinion that Ground I, alleging that certain claims, including claims 1, 3, 21-22, and 24-25, are anticipated by Bergstrom-'059 (Ex. 1004), does not establish anticipation, particularly of claim elements 1[e] and 1[h]. I have been informed that a dependent claim incorporates all the elements of the claims from which it depends. Because claims 3, 21-22, and 24-25 all depend from claim 1, these claims are also not anticipated.

23. Second, it is my opinion that Ground II, alleging that certain claims, including claims 1, 3-5, 20-22, and 24-25 are obvious in view of Nakazawa-'190

(Ex. 1008) in combination with Glaug-'753 (Ex. 1006), does not establish the obviousness of any claim, particularly claim elements 1[e] and 1[h]. Because claims 3-5, 20-22, and 24-25 all depend from claim 1, these claims are also not obvious.

24. Third, it is my opinion that Ground III, alleging that claim 7 is obvious in view of Nakazawa-'190 (Ex. 1008) in combination with Glaug-'753 (Ex. 1006) and Cohen-'429 (Ex. 1016), does not establish obviousness of claim 7, particularly elements 1[e] and 1[h] of claim 1 from which claim 7 depends.

25. Fourth, it is my opinion that Ground IV, alleging that certain claims, including claims 1-5, 7-8, 21-22, and 24-25 are obvious in view of Nakazawa-'190 (Ex. 1008) in combination with Ponomarenko-'236 (Ex. 1007), does not establish the obviousness of any claim, particularly claim elements 1[e] and 1[h]. Because claims 2-5, 7-8, 21-22, and 24-25 all depend from claim 1, these claims are also not obvious or anticipated.

26. Fifth, it is my opinion that Ground V, alleging that certain claims, including claims 1, 3-5, 21-22, and 24-25, are anticipated by Nakazawa-'190 (Ex. 1008), does not establish the anticipation of any claim, particularly of claim elements 1[e] and 1[h]. Because claims 3-5, 21-22, and 24-25 all depend from claim 1, these claims are also not obvious or anticipated.

VI. LEGAL STANDARDS FOR ANTICIPATION AND OBVIOUSNESS

27. I understand that the Petitioner has the burden of proving the challenged claims anticipated or obvious by a preponderance of evidence, which means proving that the challenged claims are more likely than not anticipated and/or obvious. I further understand that Essity has cited a number of court cases in its Patent Owner Preliminary Response, and I have applied the standards set forth in those court cases in forming my expert opinions.

A. Anticipation

28. I have been informed by counsel that a claim is anticipated when a single prior art reference discloses, either expressly or inherently, each and every claim element arranged in the order specified by the claim. I have been informed that a claim limitation is disclosed for the purpose of anticipation only if a person of ordinary skill in the art would have understood the reference to disclose the limitation based on inferences that a POSA would reasonably be expected to draw from the explicit teachings in the reference when read in light of the POSA's knowledge and experience.

29. I have been informed that a claim limitation is inherent in a prior art reference only if that limitation is necessarily present when practicing the teachings of the reference, regardless of whether a POSA recognized the presence of that limitation in the prior art.

30. I also have been informed that if a prior art reference must be modified to meet a disputed claim limitation that reference does not anticipate the claim.

B. Obviousness

31. I have been informed by counsel that a patent claim may be unpatentable if it had been obvious in view of a combination of prior art references. I have further been informed that a patent claim is obvious only if the differences between the subject matter of the claim and the prior art are such that the subject matter as a whole was obvious to the POSA in the relevant field at the time the invention was made. Specifically, I understand that the obviousness question involves a consideration of the following factors:

- the scope and content of the prior art;
- the differences between the prior art and the claims at issue;
- the knowledge of a person of ordinary skill in the pertinent art; and
- if present, objective factors indicative of non-obviousness, sometimes referred to as “secondary considerations.”

32. I have been informed that for a claimed invention to be considered obvious over a combination of references, the POSA must have had a motivation and/or reason for combining teachings from multiple prior art references in the manner proposed to arrive at the claim. I further understand that in determining

whether a prior art reference would have been combined with other prior art or with other information within the knowledge of the POSA, the following are examples of approaches and rationales that may be considered:

- 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 in the same way;
- applying a known technique to a known device ready for improvement to yield predictable results;
- applying a technique or approach that would have been “obvious to try,” i.e., choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- 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 would have been predictable to one of ordinary skill in the art;
- 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.

33. I understand that this motivation or reason to combine may come from a prior art reference or based on the POSA's knowledge or common sense.

34. I understand that if a prior art reference teaches away from a particular combination, for example by discouraging or warning against using a specific feature or combination of features that is later claimed in a patent, this teaching away can defeat motivation to combine and weigh in favor of non-obviousness.

35. I have been informed that for a combination of references to render the claimed invention obvious, the POSA must have been able to arrive at the claimed invention by altering or combining the applied references, and must have had a reasonable expectation of success in doing so. I understand that the claim is considered as a whole, so the obviousness analysis requires consideration of whether the claimed combination of elements was rendered obvious by the cited prior art.

36. I understand that secondary considerations, such as commercial success, long felt but unresolved needs, failure of others, skepticism of others, licensing, unexpected results, praise of experts, and copying must be considered before reaching a conclusion on the obviousness of a claimed invention.

37. Finally, I understand that it is important to guard against slipping into the use of hindsight and to resist the temptation to read into the prior art the teachings of the invention in issue. I have been informed it is improper to rely on

the inventor's own path to support a conclusion of obviousness; what matters is the path that the POSA would have followed, as evidenced by the pertinent prior art.

VII. SCIENTIFIC CONCEPTS RELEVANT TO THE '138 PATENT

38. In my opinion, certain scientific concepts relevant to the patentability of the claims were inadequately addressed, or not addressed at all, by the Petition and the Pourdeyhimi Declaration. The Petition and Pourdeyhimi Declaration did not substantively address issues relating to the novelty of the fluid flow control structure claimed in the '138 patent, the differences between acquisition and distribution layers within an absorbent article, the challenges and difficulties involved in modifying the layers within an absorbent article, and the difficulties in manufacturing introduced when adding even a single layer to an absorbent article. Dr. Pourdeyhimi also overlooks the material and manufacturing costs of adding layers to an absorbent article. The challenges are significant.

39. Dr. Pourdeyhimi overlooks these challenges in part because he is a lifelong academic and professor who has focused his work on nonwovens and material *properties*. Based upon his CV and the opinions expressed in his declaration, in my opinion he has little to no experience with designing absorbent articles for incontinence, nor the requirements for successfully designing and manufacturing these articles for actual use by consumers. He has multiple patents for nonwoven fabrics for use in drug delivery, filters, antennas, capacitive fabrics,

and photoluminescent fiber products, but he has listed no patents directed to absorbent articles in his CV.

40. Because of his lack of expertise with designing and manufacturing absorbent articles, Dr. Pourdeyhimi incorrectly advocates throughout his declaration that one material or layer in an absorbent article can be inserted into another via “simple substitution” without providing any rationale. *See, e.g.*, Pourdeyhimi Declaration ¶¶ 191, 244. This makes Dr. Pourdeyhimi’s declaration unpersuasive. In my opinion, and as would be known in the art in 2011, absorbent articles are made using highly engineered fabrics, with each fabric layer having a particular purpose in each absorbent article, and there is no room for indiscriminate design, waste, and surplusage. *See* Ex. 1010, Ajmeri at 86 (“In addition to high productivity and low cost, one of the key aims in designing hygiene materials is to reduce the size or weight without compromising the fluid holding capacity.”).

A. Specific Responses to Dr. Pourdeyhimi’s Technology Overview

41. I provide the following opinions regarding specific statements in Dr. Pourdeyhimi’s Section V, “Overview of the Technology.” Any failure to address a particular point raised by Dr. Pourdeyhimi does not signal my agreement with such a point; rather, I address only the points necessary to refute Dr. Pourdeyhimi’s opinion below.

42. I agree with Dr. Pourdeyhimi regarding the diversity of products sold today to manage various quantities of bodily fluids in consumers from infants to the elderly. *See* Pourdeyhimi Declaration, ¶ 29. These products range from menstrual use to light urine leakage to heavy urine leakage to managing feces, or BM. I agree that these products come in various sizes and shapes.

43. While different absorbent articles existed before 2011, they contained a variety of materials fit for the purpose of each particular article. For example, menstrual pads and some light incontinence products generally do not contain an acquisition layer or distribution layer because such layers are not necessary, are costly, and would not improve the article's function and performance.

44. In addition, in my opinion, one cannot take the design of a tampon or light incontinence product and convert it to, for example, a baby diaper. These products are different and perform different functions. Functions of fluid movement are different: products designed for rapid fluid penetration are different from products designed for maximum absorbent capacity.

45. I generally agree with Dr. Pourdeyhimi's citation of Ajmeri for the point that "one of the key aims in designing hygiene materials is to reduce the size or weight without compromising the fluid holding capacity." *See* Pourdeyhimi Declaration ¶ 30. In my opinion, this 2010 reference teaches away from using additional layers, holes, openings, or non-absorbent materials within an absorbent

hygiene product. Adding layers increases size, weight, or complexity and may lead to decreased absorbent capacity. That is, a POSA would understand that the added weight and bulk from an additional layer would need to be removed from elsewhere in the product, usually the absorbent layer, due to cost and bulk. Further, a POSA would know that introducing a hole or void in the product would both increase the size of the product and reduce its total absorbent capacity.

46. I disagree with Dr. Pourdeyhimi's assessment that "the absorbent article must be able to absorb fluid at the *speed it is delivered*." Pourdeyhimi Declaration ¶ 34. The reality is more complicated. In a poorly engineered article, if you have a rapid insult of fluid in the center of the absorbent article, the absorbent material in the center will be saturated immediately and the product will be forced to rely on capillary action to move fluid throughout the article. This is a slow and inefficient process which would be further inhibited by the use of super-absorbent polymers ("SAPs") such as sodium polyacrylate which can lead to gel blocking and further inhibition of the distribution of fluid flow in all directions within the article. Thus, an absorbent article must absorb fluid both quickly *and efficiently* throughout the article to maximize exposure to the absorbent materials while preventing leaks or overflow of fluid due to inefficient fluid flow.

47. I generally agree with Dr. Pourdeyhimi's citation of White2003, Gupta2002, Ajmeri2010, Wieseman2011 for the point that maintaining dryness for

the wearer is critical. *See* Pourdeyhimi Declaration ¶ 35. These cited references all point to facings and topsheets to keep the wearer dry when the product is in use. Dr. Pourdeyhimi does not, however point to any teaching in these references of using an opening in the absorbent layer along with a multi-layer fluid flow control structure to attain this goal. In fact, the “facing” in Gupta2002 is disclosed as having the function of maintaining dryness and a dry surface in contact with the skin.

48. Dr. Pourdeyhimi oversimplifies the elements of an absorbent article. *See* Pourdeyhimi Declaration ¶ 36. A multitude of product designs existed before the inventions of the '138 patent, but none disclosed the fluid flow control structure claimed in the '138 patent. Further, Dr. Pourdeyhimi says that designs included “one or more fluid acquisition/distributions layer(s),” but he fails to acknowledge that zero is also an acceptable and practical number of acquisition layers or distribution layers. I also note that the absorbent layer can be a cellulosic pulp in addition to the options disclosed by Dr. Pourdeyhimi.

49. In an absorbent article, the most important role of the topsheet is to keep the body from directly contacting the absorbent material. And when bonded directly to the back sheet, the topsheet keeps the absorbent core sandwiched in the middle of the article. But a 3D-apertured film topsheet may be easily cut, torn or stretched and deformed if the process is not designed to handle this weak material.

As an example, a POSA would know not use a 3D-apertured film like Tredegar Aquidry in baby diapers located where the diaper tape is attached. Such a design would require a minimum of 2 pounds of cross-direction (“CD”) tensile strength for the topsheet, whereas 3D-apertured films typically only have about 1.5 pounds of CD tensile strength. Therefore, a POSA would know to choose a much stronger nonwoven fabric as a topsheet in such a product. Further, if a nonwoven were laminated on top of a 3D structure, it would reduce the stretch properties of the laminate to be less than even the nonwoven itself. Because of these challenges, the topsheet must be engineered to move fluid away from the body while being strong and flexible enough to withstand both manufacturing pressures and multiple insults of fluid.

50. I generally agree with Dr. Pourdeyhimy regarding the materials used in absorbent articles. See Pourdeyhimy Declaration ¶¶ 45-49. I note that not all absorbent articles use SAPs. Some use only cellulose pulp or an “airlaid” compressed pulp layer to get the thinness desired. See EX1018 at 44.7 (“Thinness had become a major factor. It is perhaps ironic that the concept of thinness had already been developed and exploited in feminine hygiene products but in baby diapers there had been significant initial resistance.”)

51. I disagree with Dr. Pourdeyhimy’s statement that “[b]efore the ’138 patent, it was also known that absorbent articles may also have openings or

channels within one or more absorbent core layers to enhance the absorbent article's fluid management capabilities.” Pourdeyhimi Declaration ¶ 47. At the time the '138 patent was filed, the art taught that using an opening or channel in an absorbent layer in an incontinence product would be detrimental to fluid management. Dr. Pourdeyhimi misrepresents the teachings of EX1005-Kim, which teaches away from prior art designs. EX1005-Kim teaches that, when there is void space or an opening under the top sheet, “the bodily fluid temporarily retained in the secondary absorbent member 58 [fails] to be immediately absorbed...As a result, the wearer may feel wet.” EX1005-Kim 1:37-50. In other words, Kim is describing a prior art absorbent article with an aperture in the first absorbent layer that is not desirable because it causes the wearer discomfort and may cause leaks. In my opinion, this describes the general state of the art at the time the '138 Patent was filed.

52. Dr. Pourdeyhimi cites Nakazawa for the premise that hole portions in the absorbent material can allow the absorbent material “to bend and conform more closely to the wearer’s urination site, improving wearer fit.” Pourdeyhimi Declaration ¶ 48. Dr. Pourdeyhimi interprets this statement to indicate that Nakazawa teaches that openings in an absorbent material can “promote more uniform absorption,” result in “more even distribution,” and “enhance comfort by keeping the surface drier and reducing bulkiness.” Pourdeyhimi Declaration ¶ 48.

I disagree with Dr. Pourdeyhimi's non sequitur. I do not read Nakazawa to disclose these points. In fact, as noted above with respect to Kim, openings in the absorbent material can cause significant problems, including leaks and severe wearer discomfort. EX1005-Kim at 1:37-50.

53. The openings and channels in absorbent cores that existed prior to the '138 Patent were primarily for folding or shaping the product to the wearer. A hole with no absorbent material is, by definition, not absorbent, and so does not contribute to the total absorbent capacity of the absorbent article.

54. A POSA would understand that, as of the prior date of the '138 Patent, a hole or cavity in an absorbent article would be detrimental because fluid over a hole or within a cavity would stay on the surface, as there is no material underneath to wick the fluid away via capillary action.

55. I generally agree with Dr. Pourdeyhimi's definition of acquisition distribution layer, or "ADL." Pourdeyhimi Declaration ¶ 50. Ajmeri2010, Gupta2002, Kosemund2009, Glaug, and Ponomarenko all disclose an ADL placed between the topsheet and absorbent core. This is the traditional placement of an ADL because it facilitates the quick and efficient movement of fluid through the topsheet into the absorbent core, improving wearer dryness. Bergstrom discloses a single acquisition layer between absorbent cores, and Nakazawa discloses a single diffusion layer. A POSA as of the priority date of the '138 Patent would

understand that a single acquisition or diffusion layer would be ideal in balancing efficiency and cost. Likewise, a POSA would understand that introducing multiple ADL layers between two absorbent cores would increase void space and product size, would lead to inefficient movement of fluid between layers, and would significantly increase cost and manufacturing difficulty. A POSA would not use two layers when one layer is sufficient, as it is in Bergstrom and Nakazawa.

56. I generally agree with Dr. Pourdeyhimi that the primary purpose of an ADL is to move fluid away from the topsheet. See Pourdeyhimi Declaration ¶ 51. The ADL also acts to keep fluid away from the wearer and increase comfort and dryness. In this way, it was preferable in the prior art to have the ADL above the absorbent material, rather than below it or sandwiched between absorbent layers where it will be less efficient.

57. I further agree with Dr. Pourdeyhimi that a function of an ADL is to enhance spreading of the fluid throughout the absorbent core. Pourdeyhimi Declaration ¶ 51. Because of this, one property of an ADL is that it must be fluid permeable to allow fluid to pass through and maximize exposure to the absorbent material. I would not consider a material that is liquid impermeable to be an ADL because it does not allow for the flow of fluid in the Z-direction (into the article away from the body). In other words, an ADL constructed of an impermeable material would not allow for either acquisition or distribution of fluid into the

absorbent core; rather, it would prevent the absorbent underneath the barrier from absorbing fluid, reducing the overall effective absorbent capacity of the article, increasing the amount of time it takes to absorb fluid, and potentially causing leaks and wearer discomfort.

58. Dr. Pourdeyhimi notes that for a “wicking or transport layer,” or an ADL, “the important characteristics are wettability, pore size and pore distribution.” Pourdeyhimi Declaration ¶ 52. I agree, and note that a water repellant, impermeable layer with no pores within an absorbent article would not be considered an ADL because it does not wick or transport fluid through the layer.

59. I note that the first ADL was incorporated under Huggies Diapers top sheet in the 1980s. At this time, the ADL was simply a second spunbond top sheet. This was done to provide some distancing from the body from the wet absorbent core. It was also the time when the topsheet became thinner, such that additional distancing was required. In the early 1990s when diapers became much thinner and with 50% levels of SAP or fluff pulp in the absorbent core, a much thicker acquisition layer was required. The acquisition layer itself is non-absorbent and is designed as a porous structure to manage and slow the flow of fluid, allowing for more efficient fluid distribution along the product’s length. In my experience, ADL layers reduce the rate of fluid penetration into the absorbent core in exchange

for more dryness on the skin and more efficient distribution of fluid across a greater surface area of absorbent core.

60. I personally worked on the project referenced by Dr. Pourdeyhimi in Paragraph 52 of his Declaration as a “two layer ‘Acquisition/Transport’” system. The goal of this project was to improve commercialization of the “high loft” or “high level” Fluff/SAP material. The loft created a circuitous path for the fluid to travel. Due to the arrangement of the fibers in the lengthwise direction, the acquisition and transport layers moved slightly more fluid towards the ends of the article, rather than moving fluid down into the Fluff/SAP layer of the absorbent article. As a result, I have observed fluid overflowing in the X- and Y-directions well before the ends of the product are saturated. This is undesirable, as having a barrier in the middle of the article results in leakage out of the sides and ends of the article over the barrier, rather than having fluid flow deeper into the article away from the body. Thus, while Dr. Pourdeyhimi cites this figure to show a product with both an acquisition layer and a transport layer, a POSA would understand that this design would inhibit fluid flow deeper into the product in the Z-direction. And Dr. Pourdeyhimi provides no opinion that this figure discloses a fluid flow control structure as claimed in the ’138 Patent.

B. Additional Opinions on Absorbent Article Technology

61. Below I provide additional opinions regarding my opinion of the state of the art of absorbent articles as of the filing date of the '138 Patent.

1. Practical Considerations in Product Design and Manufacture

62. The design and manufacture of absorbent products is guided by the end-process requirements of consumers. That is, a product made for handling fecal matter or BM is designed and manufactured differently from a product made for solely handling urinary incontinence or menstrual fluid. The materials designed to be integrated into these different products are also quite different. A POSA would understand that the materials and layers used in a product made for handling BM would not necessarily be suitable for light urinary incontinence and vice versa. And a POSA would not be motivated to take materials or layers from a product made for handling BM and put them in a light urinary incontinence product, or layers from a product designed for rapid acquisition of fluid and put them in a product designed for efficient diffusion of fluid. Nor would a POSA have a reasonable expectation of success in swapping materials or layers in this way.

63. For example, an absorbent fiberized fluff core may be airlaid, completely wrapped with tissue, partially wrapped or not wrapped at all. The processes to produce each variant are significantly different, are not interrelated,

and cannot be changed or substituted for each other. Manufacturing production lines are also designed specifically for each product and cannot be interchanged.

64. As a further example, manufacturing a double absorbent core in place of a single core requires, at a minimum, a second set of hammermills, a second set of unwrap stations, and a second forming section, which would require a total rebuild of the converting line. Adding additional layers of materials can require additional unwinds, folding bars, glue stations, cutting the process equipment, and in general making the entire production line longer by inserting a section into the middle. Adding sections could require shifting the machine to add in a 20-foot or 30-foot section of machinery. This could impact multiple machines for a larger manufacturer. And given how efficient manufacturing plants are designed, this could require expanding the manufacturing plant walls or moving the machine to a new building, requiring disassembly and reassembly. The costs are significant.

65. As an analogy, think about wanting more space in the back seat of an existing car. Such a modification would require cutting the whole car, inserting a section, changing the drive shaft, fuel lines, brake lines, and electrical wiring. This results in a car that may be less safe with poor performance and at a higher cost than purchasing a whole new car with the desired rear seat space.

66. Just as absorbent products come in many sizes and shapes, the machines to produce all these products also come in many sizes and shapes. Flat

machines that produce products such as simple panty liners are dramatically different in size as compared to bed pads or baby diapers. For example, EX1009-White discloses a relatively simple light, flat machine for producing an airlaid absorbent product. See EX1009-White at 247:

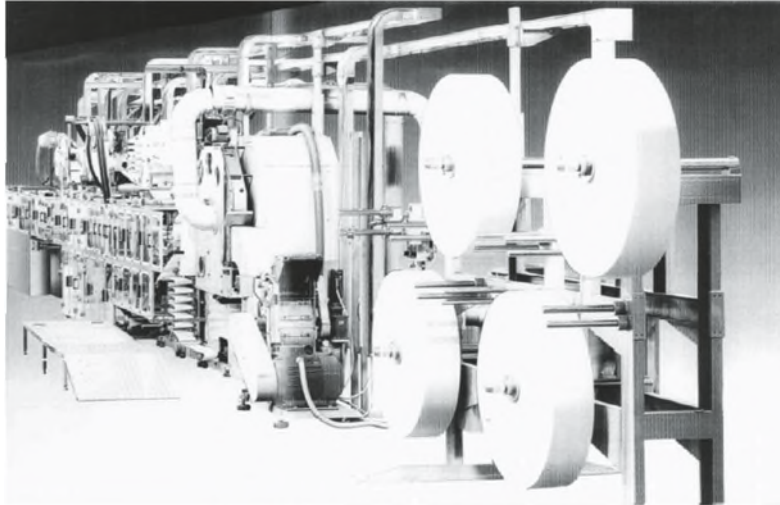


Fig. 3 Production machine for light incontinence products

This machine contains forming sections but no packaging unit. A modern absorbent hygienic production line would be much more complex, with stamping and packaging sections. These machines can be hundreds of feet long and can produce over a thousand products per minute.

67. Given the complexities involved in material selection, manufacturing, and material interfaces and compatibility, the components of various products are not easily interchangeable by “simple substitution” as Dr. Pourdeyhimi suggests. See Pourdeyhimi Declaration at ¶ 191; see Ex1009 at 246-47:

These components are assembled by the machine and held in their relative positions within the structure by the use of hot-melt adhesives.

With the exception of the hot-melt adhesives, the other components are all concerned with the containment or control of the fluid within the structure. The fact that the individual components are produced off-line and then assembled on a dedicated manufacturing unit produces a second potential area of difficulty in addition to the product weight variation. Each web of component material has to be capable of being fed through the production unit at relatively high speed (3[00]–400 units per minute) and this requires these webs to have sufficient strength and elongation properties to run continuously without breaks. This requirement limits the extent to which the web may be modified for purely absorbency characteristics, for example, weight reduction. Further problems arise because, while there is some understanding about the interaction of fluids within each component (this can be defined to some extent by the standard absorbency models), very little is known about the flow through the interfaces that exist between the different components. Any attempt to produce significantly better products needs to address these problems.

Today, instruments can produce 700-1000 adult incontinence products per minute, running at 1200+ surface feet per minute.

68. Indeed, while adult light incontinence products and adult diapers are similar, they contain dramatically different materials and components assembled in a specific way, and the machines that produce these products may not be interchangeable or modifiable. In most cases, it would be easier to purchase a new machine than make these significant changes. Singular material substitutions that have different properties may require major changes to the production converting

line, and the designs would likely fail due to incompatible tensile properties or stretching properties.

69. Further, adding a secondary material or layer will result in major changes, increased downtime, and cost of converting the production line as well as the additional cost of materials themselves may make purchasing a new production line much more attractive.

70. Similarly, adding embossing or cutting holes will also result in major changes to the production line. These changes would require an embossing station, additional vacuum lines, additional electronic controls and much more.

71. As an estimate based on my experience, a minor material substitution of similar materials with similar properties could cost around \$150,000 to \$250,000 or more. A major material substitution would require a machine redesign at a cost well over \$1 million, and as noted above it would likely be easier to just purchase a new machine rather than modifying current equipment or products.

72. Further, adding or changing the layers in a product can substantially affect product cost. Adult incontinence products are consumable, disposable products with relatively low profit margins. Adding a layer of nonwoven or polymeric material to an absorbent article can easily double the price of materials when considering material costs, labor, and complexity of manufacturing. To

indiscriminately add a layer while keeping price generally consistent, a manufacturer would need to remove something from the absorbent article, typically reducing the absorbent capacity and performance of the article. To be sure, design and manufacture of absorbent articles requires carefully balancing performance and cost. These are not “simple substitutions” as Dr. Pourdeyhimy suggests.

2. Overview of the ’138 Patent

73. Dr. Pourdeyhimy provides a brief overview of the ’138 Patent in his declaration. Pourdeyhimy Declaration ¶¶ 53-56. While his statements are generally accurate, he overlooks the novelty and essential elements of the claimed inventions.

74. The ’138 Patent discloses that one problem in the prior art was “the side leakage problem”—*i.e.*, that because of the “limited space available in the crotch portion of the underwear, the articles are by necessity designed with relatively small width. For this reason, a particular problem with such articles is that they may leak at the side edges, before the full absorption capacity of the article has been utilized.” ’138 Patent at 1:21-29.

75. The solution as stated and claimed in the ’138 Patent is “an absorbent article having improved intake capacity, fluid distribution properties, and leakage security.” ’138 patent at 2:3-5.

76. The inventions claimed in the '138 Patent require that the fluid flow control structure is a layered structure comprising a non-perforated fibrous polymeric layer and a first perforated polymeric layer. *See* '138 Patent, cl. 1.

77. The inventions claimed in the '138 Patent further require that the first absorbent layer has “an opening that passes through the first absorbent layer from one major surface to an opposing major surface and therebetween the opening is surrounded by a closed periphery of first absorbent layer.” *See* '138 Patent, cl. 1.

78. The inventors of the '138 patent solved the stated problem of side leakage by inventing an absorbent article with a fluid permeable topsheet, and impermeable backsheet, an absorbent core with an opening, and a multi-layer fluid flow control structure disposed between the first absorbent core with an opening and a second absorbent core. *See* '138 Patent, cl. 1.

79. In my opinion, as of the filing date of the '138 Patent, a POSA would have expected that the “side leakage problem” would be made worse, not better, by the use of an opening in the absorbent layer and the use of a multi-layer fluid flow control structure claimed in the '138 Patent.

80. I generally do not disagree with Dr. Pourdeyhimi's labeling of Figure 2 of the '138 patent at Paragraph 56 of his Declaration. The purple highlighted area that he designates the “Fluid Control Structure” is not, however, indicative of the actual *structure*, as Figure 2 depicts the fluid flow control structure as a single

layer. In my opinion, Dr. Pourdeyhimi ignores the Figures specifically describing the fluid flow control structure because they show how different the fluid flow control structure of the '138 Patent is from the prior art.

81. Figures 3 and 4 of the '138 patent show the layered structure required for the fluid flow control structure as claimed in claim 1 of the '138 patent:

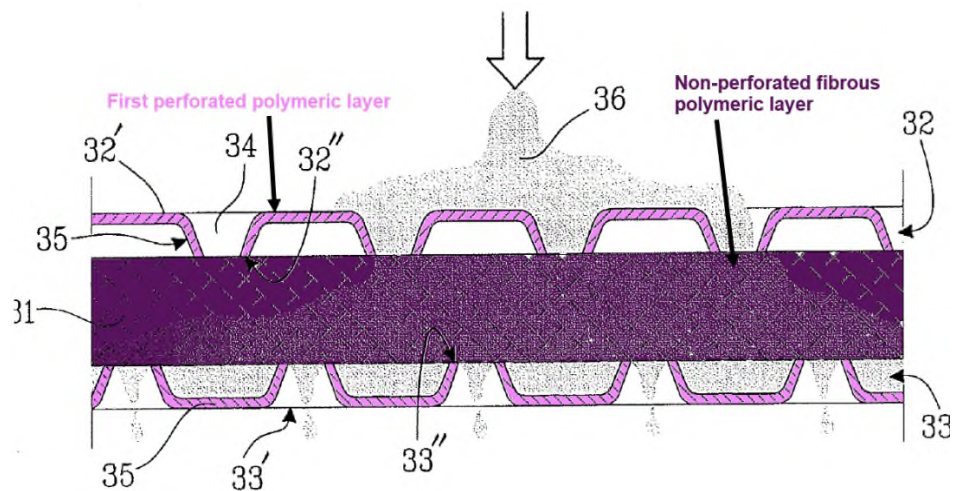


Fig. 3

Figure 3 of the '138 Patent depicts a 3-layer embodiment of the claimed invention, with a non-perforated fibrous polymeric layer (31) sandwiched between two perforated polymeric layers (32, 33). The 2-layer structure recited in claim 1 requires only one perforated polymeric layer in addition to the non-perforated fibrous polymeric layer.

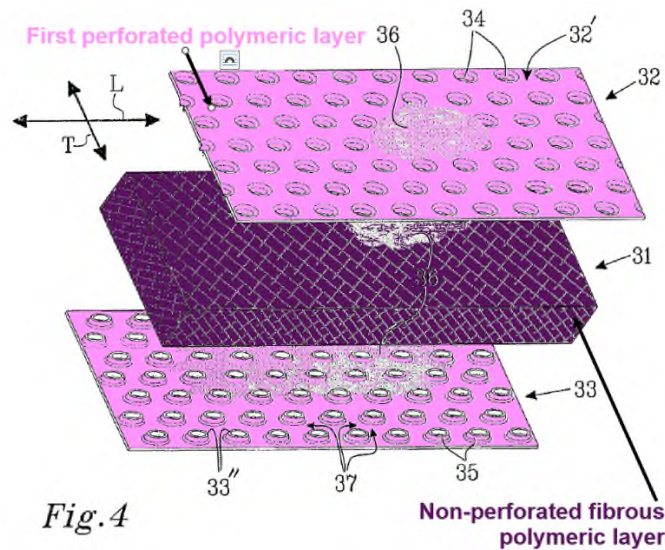


Figure 4 is an exploded diagram of the 3-layer fluid flow control structure depicted in Figure 3. The specification discloses both 2-layer and 3-layer fluid flow control structures; claim 1 requires that the fluid flow control structure be a layered structure with a non-perforated fibrous polymeric layer (31) and a first perforated polymeric layer (either 32 or 33).

82. With respect to Dr. Pourdeyhimi's citation of the USPTO's argument that Glaug teaches a fluid flow control structure (Pourdeyhimi Declaration ¶ 59), I understand that the file history of a patent reflects the negotiation process between the USPTO and the patent applicant. I further understand that a patent applicant does not need to refute every point made by the patent examiner during prosecution, but rather that the applicant may distinguish just one limitation of each claim to obtain issuance of the patent. I also understand that in its Reasons for Allowance, the Examiner of the '138 Patent noted that the closest prior art of

record “fail[ed] to teach or fairly suggest a layered fluid control structure comprising a non-perforated and perforated polymeric layer in combination with the opening extending along a longitudinal center line of the absorbent article.” EX1003, 1363.

VIII. CLAIM CONSTRUCTION

83. I have been informed by counsel to interpret the language of the claims according to their plain and ordinary meaning as understood by a POSA in view of the disclosures of the ’138 Patent.

84. Prior art references must be read for what they teach, and an author of a prior art reference may act as her own lexicographer. A “layer” or “aperture” or “perforation” in one reference may not be the same as in another reference. For example, a reference from the 1990s may refer to Tredegar Aquidry 3D film as perforated, but as of the priority date of the ’138 Patent, a POSA would have universally referred to Tredegar Aquidry 3D film as an apertured film.

85. As such, I understand that reading the claims in view of the disclosures of the ’138 Patent means that terms in the ’138 patent may have a different ordinary meaning from those in the prior art. In other words, the terms in the claims must be anchored to their ordinary and customary meaning in view of the ’138 Patent.

86. Terms that are used loosely or incorrectly in the prior art do not define a term that otherwise has a clear ordinary and customary meaning as used in the '138 Patent. Also, Nakazawa is a July 2024 translation of a 2007 Japanese patent application, and the words as used may not be exactly as intended when they were written 17 years ago, making the exact wording less persuasive than a U.S. Patent.

87. In my opinion, Dr. Pourdeyhimi takes only a very surface level view of the terms used in the prior art without any deeper analysis. For example, to Dr. Pourdeyhimi, if an element of an absorbent article can be made using a “perforated film,” that element must be a “first perforated polymeric layer” simply because it uses the word perforated. This tautological approach renders Dr. Pourdeyhimi’s opinions unpersuasive.

IX. OVERVIEW OF THE ASSERTED PRIOR ART

A. Bergstrom-’059

88. Bergstrom describes absorbent articles that “adopt a particular shape in use, said shape being able to receive, distribute and store large amounts of bodily waste rapidly and effectively.” Bergstrom, 2:3-5. In other words, Bergstrom solves the problem of “handling large amounts of bodily waste, or rapid insults of bodily waste” by creating a particular “double-bowl” shape to “receive, distribute and store large amounts of bodily waste rapidly and effectively.” Bergstrom, 2:25-29.

89. The invention disclosed by Bergstrom also includes an acquisition layer 40. Bergstrom discloses that the acquisition layer 40 “acts to receive liquid rapidly, to temporarily hold it and to distribute it evenly to the upper and lower absorbent cores 20, 30.” Bergstrom, 6:16-20.

90. The invention disclosed by Bergstrom further includes a separate forming element 60. Forming element 60 is not described as receiving liquid, temporarily holding it, or distributing it to the upper and lower absorbent cores. Rather, forming element 60 is an optional shaping element included in the article in some embodiments “[t]o help prevent collapse of the three-dimensional structure of the absorbent core 10 under pressure in the width [X] direction.” Bergstrom, 8:29-30.

91. In order to prevent collapse of the three-dimensional structure of the absorbent core in Bergstrom, forming element 60 is a “stiff” element described as “typically liquid-impermeable,” such that it “makes liquid flow around the edges of the forming element 60” in the width (X) and length (Y) directions such that “[l]iquid flow towards the ends of the core 10 is thus promoted.” Bergstrom, 9:21-32.

92. Further, forming element 60 “is suitably made of a non-absorbent material, so that its physical and mechanical properties are substantially unaffected by liquid.” Bergstrom, 9:34-35.

93. Forming element 60 “should also have the required stiffness properties”; as a result, “suitable materials for the forming element 60 are plastic films, perforated plastic films and reinforced tissue or reinforced nonwoven materials.” Bergstrom, 9:35-10:4.

94. The use of the phrase “perforated plastic films,” however, does not mean that the forming element 60 itself is a perforated plastic or polymeric layer. Rather, any “perforations” must allow forming element 60 to meet the required stiffness properties while still meeting the other requirements for the forming element 60 (*i.e.*, that it is liquid-impermeable, that it makes liquid flow around the edges of forming element 60, and that liquid flows towards the ends of the core, not through forming element 60 in the Z-direction). Forming element 60 preferably acts as a “relatively planar impact surface” (Bergstrom 9:4-5) or a “wider and flatter impact surface” (Bergstrom 14:24-29) for fluid. In other words, forming element 60 is a barrier element.

95. Further, forming element 60 is optional, and only one way to help with achieving the “double-bowl” shape described by Bergstrom. Bergstrom discloses a number of other ways to achieve the double-bowl shape, including the use of elastics, fold indications, and the curvature and shape of the absorbent cores. Bergstrom 2:21-29, 3:6-9, 6:6-15, 12:31-13:6.

96. Forming element 60 is not part of any fluid flow control structure.

B. Nakazawa-'190

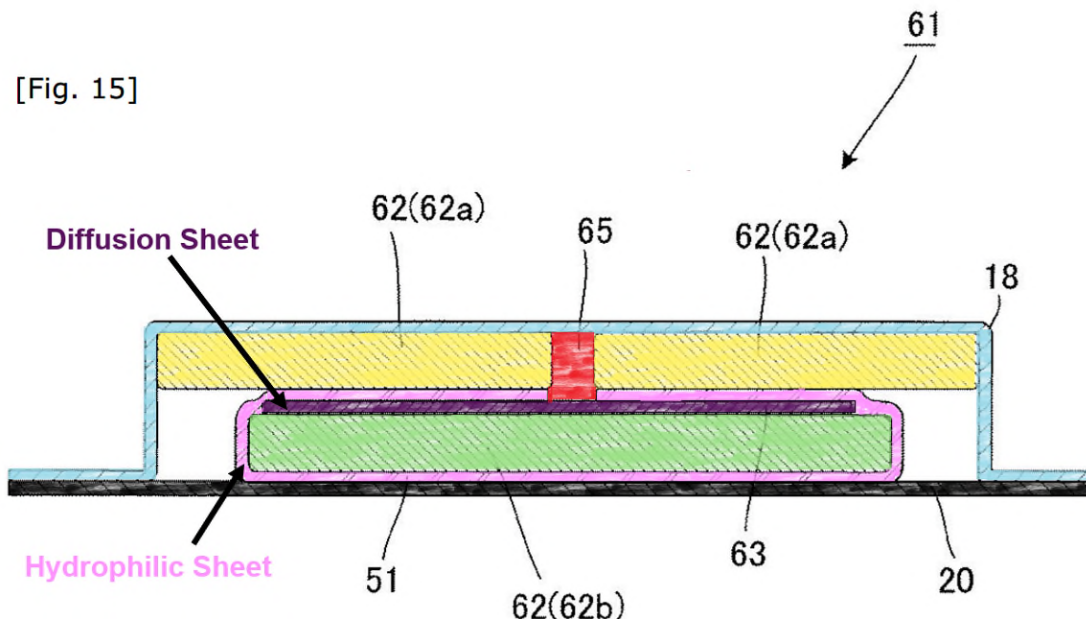
97. I generally agree with Dr. Pourdeyhimi's description of Nakazawa, although he omits a few critical details which I address below.

98. Nakazawa clearly discloses a single diffusion sheet 63, not a fluid flow control structure. Diffusion sheet 63 is located on the back surface of the upper absorbent layer and is designed to promote fluid flow in the X- and Y- directions in order to allow fluid to absorb into both the upper and lower absorbent cores efficiently.

99. Nakazawa does not disclose or teach any embodiment with a diffusion sheet that is combined with any other layers or sheets; it is not a structure, it is a single sheet in all embodiments disclosed in Nakazawa.

100. Nakazawa discloses a hydrophilic sheet that can wrap the absorbent core, which can be made of "tissue, absorbent paper, or hydrophilic treated nonwoven fabric." Nakazawa, [0043]. Nakazawa discloses an embodiment where the second absorbent material is wrapped in the hydrophilic sheet "except for the region corresponding to the openings in the hole portions 65 formed in the first absorbent material 62a. This configuration has the advantage of keeping SAP from leaking from the second absorbent material without impeding permeation of excretory fluid from the hole portions to the diffusion sheet and providing shape

stability to the second absorbent material.” Nakazawa, [0085]; *see also* Nakazawa, Fig. 15:



C. Glaug-’753

101. Glaug describes an absorbent article with a single absorbent core and an improved fluid acquisition system 34. This fluid acquisition system 34 is disposed between the topsheet 32 and the fluid absorbent core 36.

102. Glaug’s fluid-acquisition system 34 “is located on top of the core and under the top-sheet to facilitate the passage of liquid waste into the core for absorption thereby.” Glaug at 4:58-60; *see also id.* at 9:41-45 (“As should be appreciated by those skilled in the art from the foregoing the fluid acquisition system 34 of this invention optimizes the fluid penetration and volume into the

absorbent core 36 below it, while also minimizing the fluid from exiting the diaper 20 when it is saturated and under high stress.”).

103. Glaug worked for me at the time he was developing this product for Tyco Healthcare. Glaug was working on improving baby diapers with a fluid-acquisition system designed for the rapid intake of fluid into a single absorbent core to preserve dryness and comfort for the wearer. At that time, both Kimberly-Clark and Procter & Gamble came out with an improved SAP that increased the surface dryness of their baby diapers. As a private label supplier, we needed to respond with an improvement in surface dryness. Our response was the product embodied by the Glaug reference cited by Dr. Pourdeyhimi.

D. Ponomarenko-'236

104. Ponomarenko is almost entirely concerned with BM management and feces immobilization. *See* Ponomarenko at 1:42-52.

105. The holes (31) of the sublayer (30) “are capable to store and immobilize feces.” Ponomarenko at 7:27-28. There is no teaching in Ponomarenko that the holes (31) of the sublayer (30) assist in any way with fluid flow or fluid management. The sublayer holes in Ponomarenko are in fact designed for the opposite purpose: to prevent the flow or movement of feces. *See, e.g.*, 11:21-29 (“[T]he region(s) (33) of the sublayer (30) and the holes (31) thereof, and the region (23) of the topsheet (20) and the apertures (21) thereof, and

the overlap zone (40) are created such that the amount of feces that can transfer back to the skin of the use is minimized, whilst still allowing the required passage of the feces to the holes (31) of the sublayer (3) and immobilization and isolation of the feces in the holes (31) of the sublayer (30).”); *see also id.* at 1:48-52. A POSA would see the overlap of these holes as the essence of the invention, as it is how the product works to capture feces.

E. Cohen-’429

106. I generally agree with Dr. Pourdeyhimi’s description of Cohen, and note that Dr. Pourdeyhimi only references Cohen for particular properties of the Tredegar Aquidry material used by Glaug.

X. OPINIONS REGARDING SPECIFIC GROUNDS FOR ALLEGED UNPATENTABILITY

A. Ground I: Claims 1, 3, 21-22, and 24-25 Are Not Anticipated by Bergstrom-’059

107. Bergstrom does not anticipate claims 1, 3, 21-22, and 24-25 at least because it does not disclose a “first perforated polymeric layer” or a “fluid flow control structure” as claimed in claim 1 of the ’138 Patent.

1. Claim Element 1[h]: “said fluid flow control structure being a layered structure comprising a non-perforated fibrous polymeric layer and a first perforated polymeric layer”

108. Dr. Pourdeyhimi refers to forming element 60 as a “first perforated polymeric layer.” Pourdeyhimi Declaration ¶ 114. I disagree. Dr. Pourdeyhimi latches onto a single phrase in Bergstrom—“perforated plastic films”—with no

further explanation of how forming element 60 meets the “first perforated polymeric layer” limitation of claim 1 of the '138 patent. Pourdeyhimi Declaration ¶ 116.

109. As an initial matter, Dr. Pourdeyhimi’s reasoning is flawed because he conflates the potential use of a perforated *film* in forming element 60 with the requirement that the perforated polymeric *layer* itself must be perforated to meet this limitation of claim 1. Just because an element is potentially made from a “perforated film,” potentially in combination with other materials, does not mean that the element itself is a perforated polymeric layer. Therefore, forming element 60 does not meet the “first perforated polymeric layer” limitation.

110. Dr. Pourdeyhimi’s arguments to the contrary are not persuasive. In Paragraphs 115-117 of his Declaration, Dr. Pourdeyhimi makes no attempt to reconcile the disclosure of Bergstrom that “forming element 60 is typically liquid-impermeable” such that it “makes liquid flow around the edges of the forming element 60 in the width (X) direction, which makes best use of the upper and lower absorbent cores 20, 30 by distributing liquid at least in the width (X) direction. In addition, the forming element 60 may have an extension in the length (Y) direction which is less than the extensions of the upper and lower absorbent cores 20, 30 in this direction. Liquid flow towards the ends of the core 10 is thus promoted.” Bergstrom at 9:24-30. Bergstrom does not disclose any fluid flow in the Z-

direction (through the pad, away from the wearer) with respect to forming element 60. Bergstrom, 9:21-33.

111. Bergstrom teaches that the use of “perforated plastic films and reinforced tissue or reinforced nonwoven materials” is for the purpose of achieving the “required stiffness properties,” not for fluid flow. Bergstrom, 9:34-10:4. There is no disclosure in Bergstrom that the use of perforated plastic films and reinforced tissue or reinforced nonwoven materials promotes fluid flow as required by the first perforated polymeric layer as described and claimed in the '138 Patent.

112. Forming element 60 from Bergstrom is visually and conceptually very different from the perforated polymeric layer disclosed by the '138 Patent.

Compare Bergstrom Fig. 4 (left) with '138 Patent Fig. 4 (right):

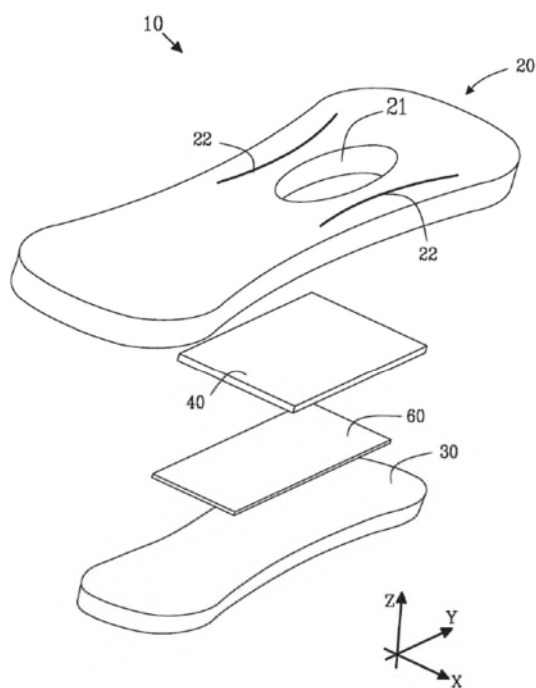


Fig. 4

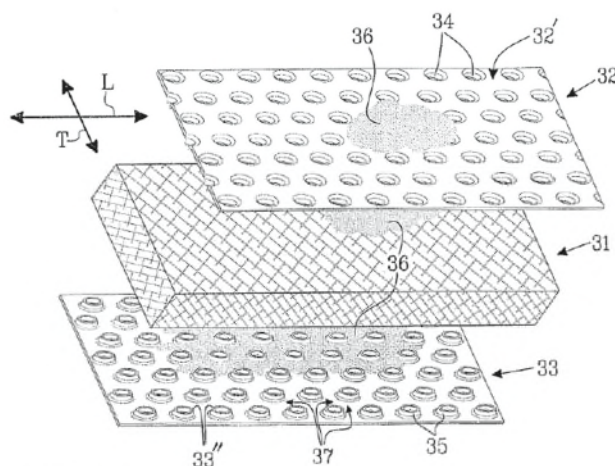


Fig. 4

113. The requirements for the first perforated polymeric layer disclosed by and claimed in the '138 Patent are not met by forming element 60 in Bergstrom. For example, the specification of the '138 Patent requires that the claimed perforated polymeric layer has “penetrating apertures” ('138 Patent at 3:30), an aperture size of 0.5-5 mm ('138 Patent at 3:45-47), and an “open area” of 5-30% or 10-25% ('138 Patent at 3:48-49). A POSA reading the '138 Patent would understand that the perforated polymeric layer must have sufficient perforations or apertures through the layer such that fluid can flow in the Z-direction through the perforated polymeric layer, otherwise it would not be a perforated polymeric layer as claimed and as disclosed by the specification. In contrast, Bergstrom does not describe forming element 60 as having any apertures, penetrating or otherwise, or open area, and in fact describes forming element 60 as “typically liquid-impermeable,” with fluid flow “around the edges of forming element 60” in the X- and Y-directions. Bergstrom at 9:24-30. As noted above, Bergstrom does not disclose **any** fluid flow through forming element 60 in the Z-direction. This is telling. Based on the disclosures of Bergstrom, a POSA would understand that forming element 60 is not a perforated polymeric layer as claimed in the '138 Patent, because fluid flow follows the path of least resistance, and any perforations in forming element 60 would not result in fluid flow in the Z-direction. In other words, forming element 60 is invariably described as a barrier to fluid flow. A

POSA would understand that this is the opposite of a perforated polymeric layer as described and claimed in the '138 Patent.

114. Further, the perforated polymeric layer(s) claimed in the '138 patent are described as “three-dimensionally formed layers. Each layer 32,33 has penetrating apertures 34 that originate in a first surface 32',33' of the layer and extend towards a second surface 32'',33'' of the layer, with the apexes of the apertures 34 forming protrusions 35 at the second surface 32'',33''. The apertures are tubular structures and can be, for example, funnel-shaped, as seen in FIG. 3. The distance between the first surface 32',33' and the second surface 32'',33'' is the apparent thickness of the respective layers 32,33. When fluid 36 reaches the first surface 32 of the first perforated polymeric layer 32, it spreads slightly on the surface 32' before passing through the apertures 34[.]” '138 Patent at 12:32-46; *see also id.* at 3:29-40. There is no description of forming element 60 in Bergstrom to indicate that it is a three-dimensionally formed layer as a first perforated polymeric layer is described and claimed in the '138 Patent.

115. Indeed, the first perforated polymeric layer in the '138 Patent invariably requires apertures that pass from a first surface to a second surface. There is no such disclosure in Bergstrom. Bergstrom uses the term perforated exactly once: in describing a film material that might be used in forming element 60. Ex. 1004-Bergstrom 10:1-4. First and foremost, however, the forming element

should be “liquid-impermeable.” Ex. 1004-Bergstrom 9:24. Material selection must comport with this liquid-impermeability requirement, with a secondary objective to “also have the required stiffness properties.” Ex. 1004-Bergstrom 10:1. A POSA would understand that mechanical perforation to affect softness or physical properties is different from perforation to promote fluid flow, particularly with the stated requirement of liquid impermeability.

116. In contrast, Bergstrom uses the term “apertured plastic film” rather than “perforated plastic film” to describe a material where “bodily fluid should be able to pass through it without hindrance,” for example topsheet 101 of Bergstrom. *See* Ex. 1004-Bergstrom 10:31-11:6. In this way, Bergstrom differentiates between a perforated but liquid-impermeable film and an apertured, liquid-permeable film.

117. Dr. Pourdeyhimi does not consider any of these teachings from Bergstrom. Rather, he simply relies on the word “perforated” without further explanation of how forming element 60, which is an impermeable barrier, is a first perforated polymeric layer as described and claimed in the ’138 Patent. Dr. Pourdeyhimi ignores the teachings of the ’138 Patent, the express disclosures of Bergstrom, and the role, function, and structure of forming element 60 in concluding that forming element 60 meets the limitation of a perforated polymeric layer.

118. I disagree with Dr. Pourdeyhimi, and it is my opinion that Bergstrom does not disclose a “first perforated polymeric layer” as described and claimed in the ’138 patent.

2. Claim Element 1[e]: “said absorbent core comprising . . . a fluid flow control structure”

119. Dr. Pourdeyhimi opines that the acquisition layer 40 and forming element 60 from Bergstrom together comprise a fluid flow control structure as described and claimed in the ’138 Patent. Pourdeyhimi Declaration ¶ 103. I disagree because forming element 60 is not a first perforated polymeric layer as set forth above, and for the additional reasons stated below.

120. Dr. Pourdeyhimi’s annotation of acquisition layer 40 and forming element 60 in the same color do not make them a structure. *See* Pourdeyhimi Declaration ¶ 107. In my opinion, acquisition layer 40 and forming element 60 do not together form a fluid flow control structure as claimed in the ’138 patent.

121. I agree with Dr. Pourdeyhimi that the layers of a fluid flow control structure must “provide the same functionality.” Pourdeyhimi Declaration ¶ 105. This comports with the ordinary and customary meaning of “structure” as a POSA would have understood it in view of the disclosures in the ’138 Patent, which is a cohesive arrangement of elements to accomplish a particular function.

122. The fluid flow control structure as a whole described and claimed in the ’138 Patent must be porous to allow the flow of fluid through the structure and

into the absorbent layers of the absorbent article. *See, e.g.*, '138 Patent at 7:45-47 (“The fluid flow control structure has a highly porous internal structure with less resistance to fluid flow than conventional absorption materials.”). Because forming element 60 is liquid impermeable, it is necessarily not porous and cannot comprise a layer of the fluid flow control structure as described and claimed in the '138 Patent.

123. Dr. Pourdeyhimi ignores key teachings from the '138 Patent that the fluid flow control structure described and claimed in the '138 Patent and forming element 60 described in Bergstrom have entirely different functions. For example, the '138 Patent describes that “the edges of the fluid flow control structure may act as barriers to fluid distribution transversely to the side edges of the absorbent article, reducing the risk of side failure.” '138 Patent at 2:42-45. Forming element 60, in contrast, promotes fluid distribution transversely to the side edges of the absorbent article, increasing the risk of side failure. *See* Pourdeyhimi Declaration ¶ 105; Bergstrom at 9:27-30. The forming element 60 in Bergstrom is essentially a splash pad for fluid; as the fluid passes through acquisition layer 40, forming element 60 preferably acts as a “relatively planar impact surface” (Bergstrom 9:4-5) or a “wider and flatter impact surface” (Bergstrom 14:24-29) for fluid. A POSA would understand that an impact surface beneath an acquisition layer is not a fluid flow control structure as described and claimed in the '138 Patent.

124. Indeed, within the absorbent article described in Bergstrom, acquisition layer 40 has a different and opposite role from forming element 60. Other than being components of an absorbent article, acquisition layer 40 and forming element 60 are never discussed together as a *structure* to accomplish any particular function, and Dr. Pourdeyhimi does not opine that it does.

125. To the contrary, as described in Bergstrom, acquisition layer 40 and forming element 60 cannot comprise a fluid flow control structure as claimed in the '138 patent. Acquisition layer 40 “acts to receive liquid rapidly, to temporarily hold it and to distribute it evenly to the upper and lower absorbent cores 20, 30.” Bergstrom, 6:16-21. In other words, acquisition layer 40 is an ADL in the context of Bergstrom—it is a thin, flexible nonwoven made of “fibrous materials, such as e.g. synthetic fibres” that necessarily promotes the flow of fluid in the positive and negative Z-directions to the upper and lower absorbent cores. Bergstrom 6:20-21. Forming element 60 is an optional element included “[t]o help prevent collapse of the three-dimensional structure of the absorbent core 10 under pressure in the width [X] direction.” Bergstrom, 8:29-30. In other words, forming element 60 is a thick, stiff element for shaping the article. Acquisition layer 40 and forming element 60 do not work together in any way in the absorbent article described in Bergstrom and a POSA would not indiscriminately consider them to be a “structure.” They are disparate in every way.

126. The arrangement of acquisition layer 40 and forming element 60 near one another in the absorbent article is not described as being for fluid flow control anywhere in Bergstrom. Rather, the placement of forming element 60 between the acquisition layer 40 and lower absorbent core 30 is only to “be less noticeable to the wearer and [to] provide a better forming effect than if it were located elsewhere.” Bergstrom 8:32-35. This further supports my opinion that forming element 60 is not a perforated polymeric layer as part of a fluid flow control structure as described and claimed in the ’138 Patent.

127. Dr. Pourdeyhimi conflates Bergstrom’s teachings with respect to acquisition layer 40 and forming element 60 in attempting to support his opinion. Pourdeyhimi Declaration ¶ 105. For example, Dr. Pourdeyhimi notes that acquisition layer 40 “has an extension in the X-direction which is less than that of the upper core in at least said region.” Pourdeyhimi Declaration ¶ 105. Dr. Pourdeyhimi then claims that this “allows liquid to reach the outer edges of the absorbent core more effectively, pointing to the section of Bergstrom describing ***forming element 60***, not acquisition layer 40. Pourdeyhimi Declaration ¶ 105. This only serves to confuse the teachings of Bergstrom and does not support Dr. Pourdeyhimi’s opinion that acquisition layer 40 and forming element 60 together comprise a fluid flow control structure. Dr. Pourdeyhimi fails to point to any teaching in Bergstrom that acquisition layer 40 and forming element 60 have the

same functionality or work together in any cohesive way to promote the flow of fluid.

128. Dr. Pourdeyhimi tacitly admits that forming element 60 does not allow fluid flow in the Z-direction. Pourdeyhimi Declaration ¶¶ 105-06. Dr. Pourdeyhimi points only to language in Bergstrom that forming element 60 “makes best use of the upper and lower absorbent cores 20, 30 by distributing liquid at least in the width (X) direction” and that “liquid flow towards the ends of the core 10 is promoted” because “the forming element 60 may have an extension in the length (Y) direction which is less than the extensions of the upper and lower absorbent cores 20, 30 in this direction.” Pourdeyhimi Declaration ¶ 106 (citing Bergstrom 8:30-9:30).

129. But this does not make forming element 60 a part of a fluid flow control structure. A POSA would understand, based on the teachings of Bergstrom, that, because forming element 60 is liquid-impermeable, that it will prevent the flow of fluid in the Z-direction. As a result, any absorbent material located directly below forming element 60 will not be exposed to fluid and will not be wetted except perhaps by ancillary wicking and capillary action from the edges of the absorbent article to the center.

130. This acts against the function of acquisition layer 40, which as noted above distributes fluid evenly in Z-direction. Forming element 60 acts as a barrier

to fluid flow in the Z-direction and will actively inhibit fluid flow through the acquisition layer 40 to the second absorbent layer. In this way, acquisition layer 40 and forming element 60 cannot form a fluid flow control structure because they are performing opposite functions.

131. Because Bergstrom does not meet the “first perforated polymeric layer” or “fluid flow control structure” limitations of claim 1 of the ’138 Patent, it is my opinion that Bergstrom does not anticipate claim 1 of the ’138 Patent.

3. Claims 3, 21-22, and 24-25

132. Because Bergstrom does not anticipate claim 1 of the ’138 Patent, and because I understand that claims 3, 21-22, and 24-25 all depend from claim 1, it is my opinion that Bergstrom does not anticipate claims 3, 21-22, or 24-25 of the ’138 Patent.

133. In addition, Bergstrom does not meet the additional limitation of claim 3, “wherein the first perforated polymeric layer is a nonwoven, a film or a film/nonwoven laminate” because Bergstrom does not disclose a first perforated polymeric layer.

134. Similarly, Bergstrom does not meet the additional limitation of claim 25, “wherein the fluid permeable top sheet is in contact with the fluid flow control structure via the opening, such that a cavity is formed along the longitudinal center

line of the absorbent article” because Bergstrom does not disclose a fluid flow control structure.

B. Ground II: Claims 1, 3-5, 20-22, and 24-25 Are Not Obvious Over Nakazawa-’190 in view of Glaug-’753

135. Dr. Pourdeyhimi opines that Nakazawa in view of Glaug renders claims 1, 3-5, 20-22, and 24-25 obvious. I disagree.

136. First, Dr. Pourdeyhimi arbitrarily and invariably refers to diffusion sheet 63 in Nakazawa as a “fluid flow control structure.” *See, e.g.*, Pourdeyhimi Declaration ¶¶ 167, 170, 172, 173, 175, 176, 177. This is misleading and incorrect in the context of the ’138 Patent. Claim 1 of the ’138 Patent recites that a fluid flow control structure is “arranged between said first absorbent layer and said backsheet, said fluid flow control structure being a layered structure comprising a non-perforated fibrous polymeric layer and a first perforated polymeric layer.” *See* ’138 Patent, cl. 1. Diffusion sheet 63 in Nakazawa cannot be a fluid flow control structure as claimed in the ’138 Patent because it is a single layer and not a layered *structure*, which as claimed and by its very nature must be made of *layers*.

137. Second, Nakazawa teaches away from using additional layers for fluid management, teaching that any additional layers would impede, rather than promote, fluid flow.

138. Third, Dr. Pourdeyhimi incorrectly refers to Glaug’s fluid acquisition system 34 as a “fluid flow control structure.” *See, e.g.*, Pourdeyhimi Declaration

¶¶ 179-183. I disagree. As noted above, claim 1 of the '138 Patent requires that a fluid flow control structure be arranged between the first absorbent layer and the backsheet.” See '138 Patent, cl. 1. It is undisputed that the fluid acquisition system 34 in Glaug “is located on top of the core and under the top-sheet.” See Glaug 4:58-59; *see also* Glaug Fig. 2 as annotated by Dr. Pourdeyhimi, Pourdeyhimi Declaration ¶ 183:

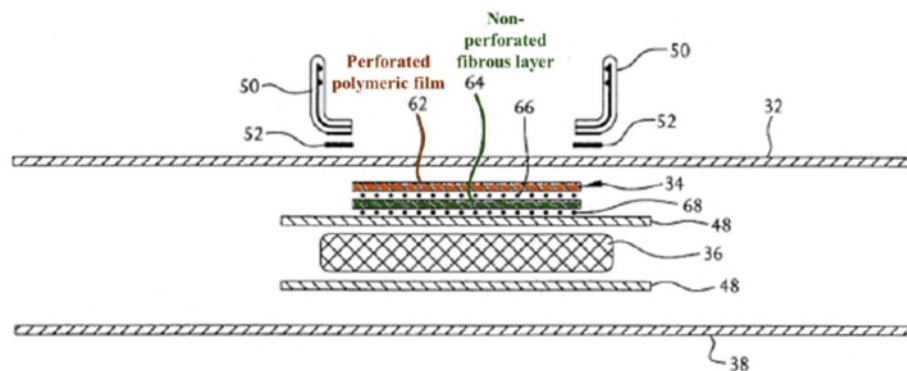


FIG. 2

As such, the fluid acquisition system 34 from Glaug does not meet the limitations of claim 1’s fluid flow control structure, as it sits between the topsheet and absorbent core, not the absorbent core and the backsheet.

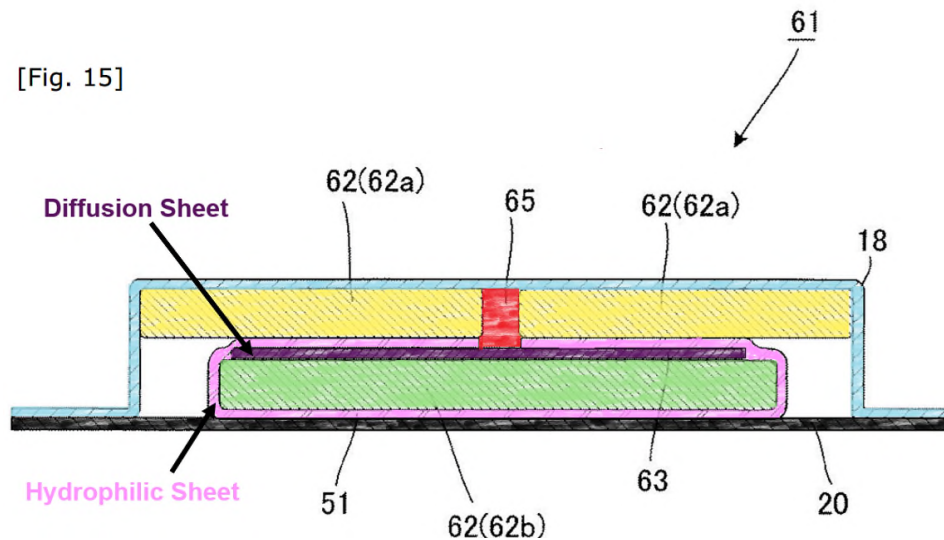
139. Dr. Pourdeyhimi fails to address how or why a POSA would modify either diffusion sheet 63 from Nakazawa or fluid acquisition system 34 from Glaug to arrive at the claimed invention. He merely opines that a POSA would be motivated to simply swap fluid acquisition system 34 into Nakazawa in place of (or in combination with) diffusion sheet 63 and would have a reasonable expectation of success in doing so. In essence, Dr. Pourdeyhimi opines that

acquisition layers in absorbent articles are invariably interchangeable. As discussed throughout my report, this type of arbitrary substitution is insufficient and incorrect.

1. Nakazawa teaches away from Dr. Pourdeyhimi's proposed modifications and combination with Glaug

140. Nakazawa teaches away from using the lower nonperforated fibrous layer 64 from Glaug, or Glaug's fluid acquisition system 34, as part of a fluid flow control structure. Nakazawa discloses that the hydrophilic sheet that can wrap the absorbent core can be made of "tissue, absorbent paper, or hydrophilic treated nonwoven fabric." Nakazawa, [0043]. Nakazawa discloses an embodiment where the second absorbent material is wrapped in the hydrophilic sheet "except for the region corresponding to the openings in the hole portions 65 formed in the first absorbent material 62a. This configuration has the advantage of keeping SAP from leaking from the second absorbent material *without impeding permeation* of excretory fluid from the hole portions to the diffusion sheet and providing shape stability to the second absorbent material." Nakazawa, [0085] (emphasis added); *see also* Nakazawa, Fig. 15:

[Fig. 15]



141. In my opinion, as interpreted by Dr. Pourdeyhimi, the “hydrophilic treated nonwoven fabric” in Nakazawa is analogous to the lower nonperforated fibrous layer 64 in Glaug. As a result, Nakazawa teaches that the fluid acquisition system from Glaug would impede permeation of fluid rather than promote it, defeating any purported motivation to combine proposed by Dr. Pourdeyhimi.

2. The Petition Does Not Provide a Reason for Why a POSA Would Have Been Motivated to Modify Nakazawa-’190 or Glaug-’753 to Arrive at Claim Elements 1[e] and 1[h] with a Reasonable Expectation of Success

142. Dr. Pourdeyhimi admits that Nakazawa “does not disclose a second, non-perforated fibrous layer for the fluid flow control structure.” Pourdeyhimi Declaration ¶ 178. For purposes of obviousness, Dr. Pourdeyhimi opines that a POSA would be motivated to either place the lower nonperforated fibrous layer 64 from Glaug below Nakazawa’s diffusion sheet 63, or would fully replace Nakazawa’s diffusion sheet 63 with Glaug’s fluid acquisition system 34.

Pourdeyhim Declaration ¶ 184. I disagree. Dr. Pourdeyhim fails to provide a satisfactory motivation for modifying and combining the references in this way. In my opinion, a POSA would not be motivated to add or exchange layers to Nakazawa's absorbent article.

- a) *A POSA would understand that Glaug's acquisition system and Nakazawa's diffusion sheet are not interchangeable.*

143. First, the purposes of diffusion sheet 63 in Nakazawa and fluid acquisition system 34 in Glaug are different and a POSA would understand that they are not interchangeable. Dr. Pourdeyhim describes the diffusion sheet in Nakazawa as “cover[ing] the lower layer of absorbent material, including the areas where there are openings in the hole portions formed in the upper layer of absorbent material.” Pourdeyhim Declaration ¶ 68 (citing Nakazawa, [0061]). I generally agree with this description, and further note that this placement is for diffusion of fluid, as the name of the element suggests. The diffusion layer therefore distributes fluid to the first and second absorbent cores more efficiently—i.e., the diffusion sheet must promote fluid flow in both the +Z (toward the body) and -Z (away from the body) directions to maximize the absorbency of both absorbent cores in the article.

144. Glaug's fluid acquisition system 34 has a different stated purpose. Glaug's fluid acquisition system 34 or transfer layers are not designed to diffuse

fluids, but rather to rapidly allow fluids to move from the body into the absorbent core. They provide superior surface dryness and prevent wetting back. They are not designed to diffuse.

145. As Dr. Pourdeyhimi recognizes, fluid acquisition system 34 in Glaug “optimizes the fluid penetration rate and volume into the absorbent core 36 below it, while also minimizing the fluid from exiting the diaper 20 when it is saturated and under high stress.” Glaug, 9:41-45. In other words, the fluid acquisition system in Glaug is focused solely on promoting fluid flow in the negative Z-direction away from the body in order to promote wearer comfort and dryness. Fluid acquisition system 34 is a bridge between the topsheet and the absorbent core “for facilitating the transference of fluid into the core.” Glaug at 3:38.

146. Further, the fluid acquisition system described in Glaug is designed for a singular absorbent core. In my opinion, a POSA would not be motivated to add layers from Glaug into Nakazawa because such a modification would disrupt the flow of fluid into the upper absorbent core as required by the diffusion sheet in Nakazawa. Indeed, additional interfaces within an absorbent article—such as those introduced by the addition of layers as suggested by Dr. Pourdeyhimi—may have negative consequences to fluid distribution. Further, adding layers can cause unexpected problems given that “very little is known about the flow through the

interfaces that exist between the different components” in an absorbent article. See Ex1009 White at 246-47.

147. As previously noted, Frank Glaug worked for me, and we never considered using the acquisition system described by Glaug in an absorbent article with a dual absorbent core. In my opinion, a POSA would understand that it would not have made sense at the time to take the acquisition system from Glaug and stick it between two cores like the diffusion sheet in Nakazawa. As noted above, the fluid acquisition system in Glaug and the diffusion sheet in Nakazawa perform two very different functions. Nakazawa’s diffusion sheet diffuses fluid between two absorbent cores while Glaug’s fluid acquisition system is designed for rapid acquisition of fluid into a single absorbent core.

148. Dr. Pourdeyhimi fails to address any of these issues. Rather, Dr. Pourdeyhimi simply concludes that “[t]he only difference between Nakazawa-’190’s single layer perforated diffusion sheet and Glaug-’753’s two layer fluid acquisition system is that Glaug-’753 discloses having a fibrous, non-perforated layer in addition to the perforated film.” Pourdeyhimi Declaration ¶ 188. In other words, according to Dr. Pourdeyhimi, a layer is a layer, and two layers are interchangeable for one. I disagree with Dr. Pourdeyhimi on this point. As described herein, the difference between a single-layer diffusion sheet in a dual-

core absorbent article and a multi-layer fluid acquisition system in a single-core absorbent article is significant and would not be considered interchangeable.

- b) *A POSA would not be motivated to add additional layers to an absorbent article due to cost and manufacturing complexity.*

149. Further, as explained in Section VII.B.1, adding layers to an absorbent article adds unnecessary manufacturing complexity and cost. Adding these additional materials and layers can increase downtime and costs and can make a marginally profitable product unprofitable.

150. These substitutions can easily cost hundreds of thousands or even millions of dollars. In my opinion, a POSA would not be motivated to add to or modify layers in an article that is known to work because of these costs, and further because of the likelihood that such additions or modifications would make the article less effective.

- c) *A POSA would not have a reasonable expectation of success in modifying Nakazawa to incorporate the fluid acquisition system from Glaug.*

151. I disagree that the combination of the diffusion sheet from Nakazawa with the fluid acquisition system from Glaug would “involve the simple substitution of one known element...for another” as Dr. Pourdeyhimi suggests. Pourdeyhimi Declaration ¶ 191. Replacing one layer in Nakazawa with two separate layers from Glaug would require, among other things, another roll

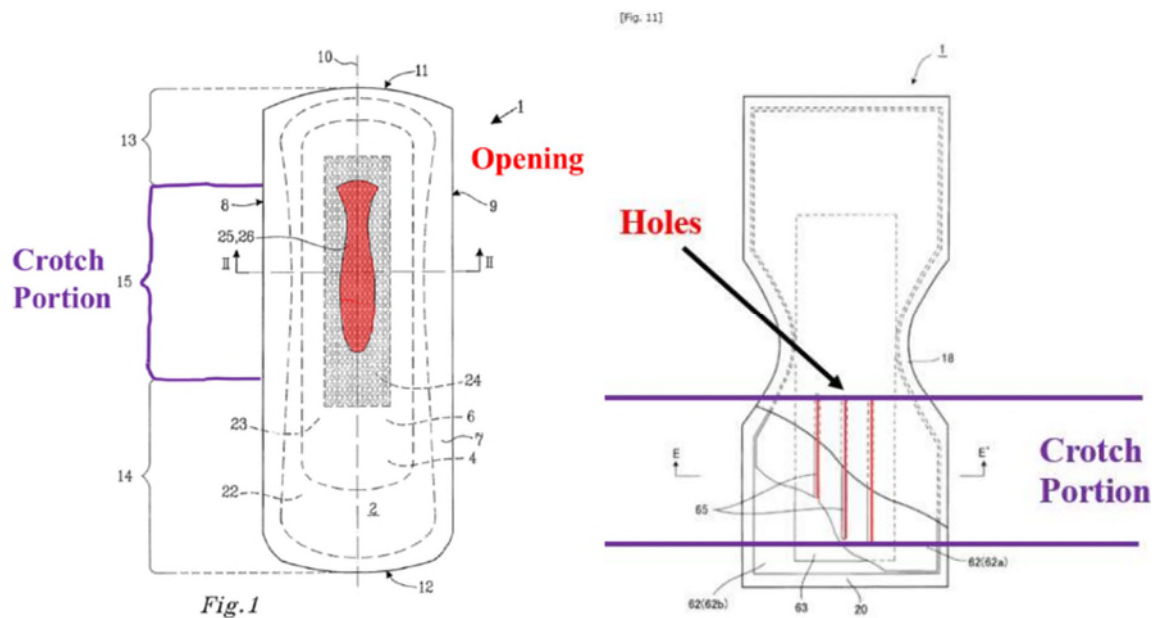
handling system which would include two unwind brackets, an automatic splicer, perhaps a second material cutting station, glue or ultrasonic bonding equipment, a new back of electronic controls and cutting and moving half a machine to add in this new section. This would be a very time-consuming process using very expensive and temperamental equipment and would be unlikely to be successful.

152. Finally, Dr. Pourdeyhimi opines that because acquisition/distribution layers were known prior to the '138 Patent, that a POSA would have a reasonable expectation of success in modifying, swapping, or combining them. Pourdeyhimi Declaration ¶ 192. I disagree. Just because a particular type of layer is well-known in the industry does not mean that all such layers are interchangeable. As discussed above, an acquisition system with layers for rapidly moving fluid down into an absorbent article is very different from a diffusion sheet for moving fluid both up into an upper absorbent core and down into a lower absorbent core via capillary action. A POSA would not expect these layers to work interchangeably and would not have a reasonable expectation of success in modifying them in the way Dr. Pourdeyhimi suggests. Dr. Pourdeyhimi's proposed combinations and modifications are driven entirely by hindsight rather than any motivation present in the art at the time of the '138 Patent. As a result, his opinions are unpersuasive.

3. Claim 21 – “wherein the opening extends through the entire crotch portion of the absorbent article”

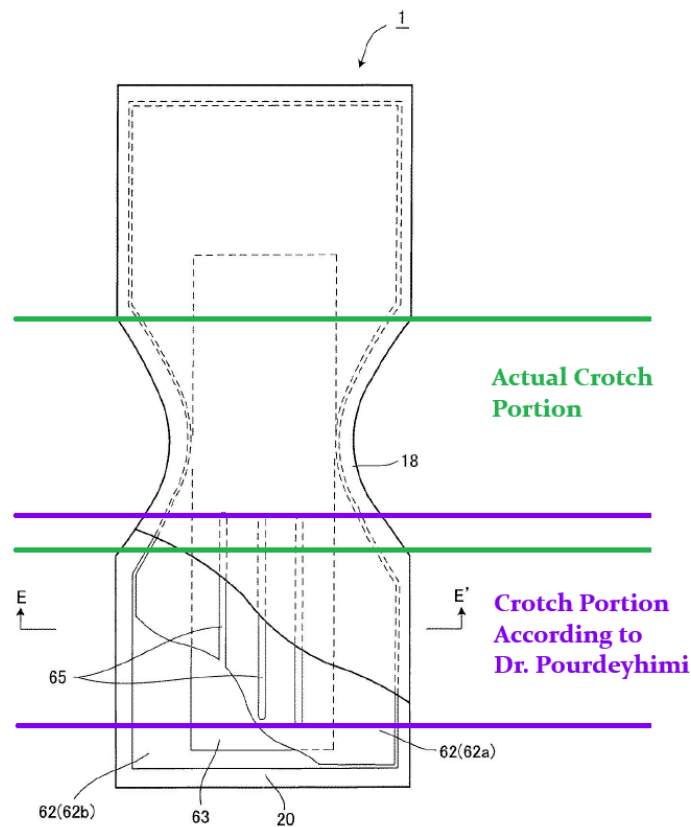
153. Dr. Pourdeyhimi opines that the hole portion 65 of Nakazawa extends through the entire crotch portion of the absorbent article. Pourdeyhimi Declaration ¶ 213. I disagree, and I find Dr. Pourdeyhimi’s annotated diagrams to be incorrect, misleading, and conclusory.

154. Dr. Pourdeyhimi points to Figure 1 of the ’138 Patent and accurately defines crotch portion 15. See Pourdeyhimi Declaration ¶ 214. When annotating Figure 11 of Nakazawa, however, he merely places the crotch portion where the hole portion 65 is, rather than where the actual crotch portion is. See Pourdeyhimi Declaration ¶ 215. A side-by-side comparison makes this clear:



155. There is in fact very little if any overlap of the hole portion 65 in Nakazawa with the actual crotch portion as defined in the ’138 Patent, which is

distinguished from the “end portions” and which “is the portion of the article that is designed to be placed in the crotch of a wearer and to be in contact with the pudendal area of the wearer.” See ’138 Patent at 5:55-64. I have reannotated Dr. Pourdeyhimi’s Figure 11 from Nakazawa to demonstrate the outer limits of the entire crotch portion:



156. It is my opinion that the hole portion 65 of Nakazawa is within the end portion of the product, in line with Nakazawa’s teaching that “by forming hole portions in the longitudinal direction, the absorbent article can be easily bent in the longitudinal direction along the hole portions, making it more likely to conform to the urination site, and improving the fit around the legs.” Nakazawa, [0049]. By

placing the hole portion in the front-end portion of the absorbent article, Nakazawa achieves the stated purpose of conforming the article to the shape of the wearer. But this necessarily means that the holes do not extend throughout an entire crotch portion of the article as required by claim 21 of the '138 Patent. If the cuts or folding lines were actually cut in the crotch portion, the disclosures of Nakazawa indicate that it would make the article less effective in preventing leakage. In my opinion, placing the cuts or folding lines in the absorbent article disclosed by Nakazawa in the crotch portion would cause cupping down instead of cupping up, which would lead to side edge leakage—a problem the inventions of the '138 Patent are intended to solve. As a result, it is my opinion that Nakazawa does not disclose the limitations of claim 21.

4. Claims 3-5, 20-22, and 24-25

157. Because the combination of Nakazawa and Glaug does not render claim 1 of the '138 Patent obvious, and because I understand that claims 3-5, 20-22, and 24-25 all depend from claim 1, it is my opinion that the combination of Nakazawa and Glaug does not render claims 3-5, 20-22, and 24-25 of the '138 Patent obvious.

158. In addition, the combination of Nakazawa and Glaug does not meet the additional limitation of claim 25, “wherein the fluid permeable top sheet is in contact with the fluid flow control structure via the opening, such that a cavity is

formed along the longitudinal center line of the absorbent article” because the combination of Nakazawa and Glaug does not render obvious the fluid flow control structure limitation of claim 25.

C. Ground III: Claim 7 Is Not Obvious Over Nakazawa-’190 in view of Glaug-’753 and Cohen-’429

159. Dr. Pourdeyhimi opines that Nakazawa in view of Glaug and in further view of Cohen renders claim 7 of the ’138 Patent obvious. I disagree, for the reasons set forth in Ground II for claims 1 and 4 and for the additional reasons below.

160. I generally agree with Dr. Pourdeyhimi regarding the disclosed pore size of the Tredegar material disclosed by Cohen. See Pourdeyhimi Declaration ¶ 229. I reiterate that a POSA, however, would not be motivated to take an apertured 3D-polymeric layer disposed under the top sheet as explained in Glaug and Cohen and insert it between the absorbent cores disclosed in Nakazawa. Cohen’s acquisition/distribution transfer system, like Glaug’s, is “disposed intermediate the topsheet and the absorbent core.” See Cohen, [0012]. A POSA would not be motivated to take materials described and utilized as an under-the-topsheet acquisition/distribution system with apertured 3D materials and use them between layers of absorbents in place of a diffusion sheet. Dr. Pourdeyhimi provides no explanation from Cohen or anywhere else in the art for how a POSA would be motivated to incorporate the disclosed Tredegar Aquidry material into a

multi-layered fluid flow control structure in place of or in addition to the diffusion sheet between cores in Nakazawa. It is simply arbitrary and in my opinion done with hindsight. For these reasons and the reasons described above, I would not expect the materials described in Cohen or Glaug to work in place of a diffusion layer as described in Nakazawa.

D. Ground IV: Claims 1-5, 20-22, and 24-25 Are Not Obvious Over Nakazawa-'190 in view of Ponomarenko-'236

161. Dr. Pourdeyhimi opines that Nakazawa in view of Ponomarenko renders claims 1, 3-5, 20-22, and 24-25 obvious. I disagree.

162. First, as discussed above, Nakazawa's diffusion sheet 63 is not a "fluid flow control structure." This phrasing is misleading in the context of the '138 Patent.

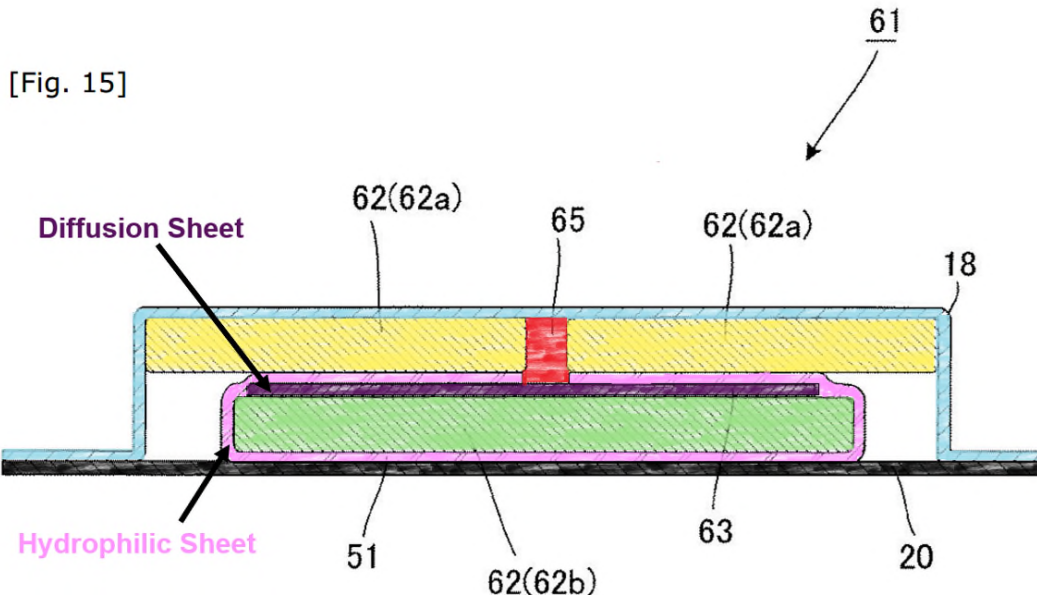
163. Second, as discussed above, Nakazawa teaches away from using additional layers for fluid management, and teaches that any additional layers would impede, rather than promote, fluid flow.

164. Dr. Pourdeyhimi inappropriately refers to Ponomarenko's sublayer 30 as being a "fluid flow control structure." *See, e.g.*, Pourdeyhimi Declaration ¶ 233. I disagree. As an initial matter, Ponomarenko's sublayer is disposed between the topsheet and the absorbent core, not between the first absorbent core and the backsheet as required by claim 1 of the '138 Patent.

165. Dr. Pourdeyhimi fails to address how or why a POSA would modify either diffusion sheet 63 from Nakazawa or sublayer 30 from Ponomarenko to arrive at the claimed invention. He merely opines that a POSA would be motivated to simply swap sublayer 30 from Ponomarenko into Nakazawa in place of diffusion sheet 63 and would have a reasonable expectation of success in doing so. In essence, Dr. Pourdeyhimi opines that layers in absorbent articles are invariably interchangeable. This is insufficient and incorrect as set forth herein.

1. Nakazawa teaches away from Dr. Pourdeyhimi's proposed modifications and combination with Ponomarenko

166. Nakazawa teaches away from using the multi-layer sublayer 30 of Ponomarenko as a fluid flow control structure. Nakazawa discloses that the hydrophilic sheet that can wrap the absorbent core can be made of “tissue, absorbent paper, or hydrophilic treated nonwoven fabric.” Nakazawa, [0043]. Nakazawa discloses an embodiment where the second absorbent material is wrapped in the hydrophilic sheet “except for the region corresponding to the openings in the hole portions 65 formed in the first absorbent material 62a. This configuration has the advantage of keeping SAP from leaking from the second absorbent material ***without impeding permeation*** of excretory fluid from the hole portions to the diffusion sheet and providing shape stability to the second absorbent material.” Nakazawa, [0085]; *see also* Nakazawa, Fig. 15:



167. In my opinion, as interpreted by Dr. Pourdeyhimi, the “hydrophilic treated nonwoven fabric” in Nakazawa is analogous to sublayer 30 in Ponomarenko. As a result, Nakazawa teaches that the sublayer from Ponomarenko would impede permeation of fluid rather than promote it, defeating any purported motivation to combine proposed by Dr. Pourdeyhimi.

2. The Petition Does Not Provide a Reason for Why a POSA Would Have Been Motivated to Modify Nakazawa-’190 or Ponomarenko-’236 to Arrive at Claim Elements 1[e] and 1[h] with a Reasonable Expectation of Success

168. Dr. Pourdeyhimi opines that a POSA would be motivated to insert Ponomarenko’s sublayer 30 into Nakazawa because “fluid flow control structures were already commonly used” and because the only difference between Nakazawa’s diffusion sheet and Ponomarenko’s sublayer is that Ponomarenko “describes having additional layers, including non-perforated fibrous layers in

addition to the perforated polymeric film.” Pourdeyhimi Declaration ¶¶ 240-241.

I disagree. Dr. Pourdeyhimi does not provide an adequate motivation to modify or combine Nakazawa and Ponomarenko to arrive at the claimed fluid flow control structure. In my opinion, a POSA would not be motivated to add or exchange layers to Nakazawa’s absorbent article, nor would a POSA have had a reasonable expectation of success in doing so, because of the marked differences between the structure and function of Nakazawa’s diffusion sheet and Ponomarenko’s sublayer.

- a) *A POSA would understand that Ponomarenko’s sublayer and Nakazawa’s diffusion sheet are not interchangeable.*

169. First, the purposes of diffusion sheet 63 in Nakazawa and sublayer 30 in Ponomarenko are different and a POSA would understand that they are not interchangeable. As described above, Nakazawa’s diffusion sheet promotes fluid flow in the -Z and +Z directions to the upper and lower absorbent cores in the article.

170. In contrast, Ponomarenko never refers to sublayer 30 as having any impact on fluid flow. The entirety of Ponomarenko is focused on improvements to feces management. See Ponomarenko at Abstract (“The sublayer includes a multitude of holes. At least some of the apertures overlap partially at least some of the holes to form combined apertures in an overlap area that has an open area of between 10% and 50%. The absorbent article may improve isolation of feces away from the skin of the wearer of the absorbent article and/or improved

immobilization of feces by the absorbent article.”); *id.* at 1:23-26 (“The problem with feces isolation or in diapers is that the feces can vary hugely in consistency and viscosity.”); 1:28-32 (“Hereto, diapers have been provided with a topsheet with one of more large openings, through which feces can pass to a void space between the topsheet and the absorbent core. The fecal material is then stored underneath this topsheet, away from the skin.”); 1:42-52 (“It has been found that improved feces isolation and immobilization and reduced re-soiling of the skin by the immobilized feces is achieved when the diaper comprises a topsheet with apertures of a specific size and a sublayer with holes of a specific size, which are positioned such that only a small degree of overlap between the holes and apertures is present. The degree of overlap should be large enough to allow effective passage of feces through the apertures of the topsheet into the holes of the sublayer, but small enough to stop the feces in the holes of the sublayer from migrating back to the skin.”).

171. A POSA reading Ponomarenko would understand that Ponomarenko’s invention is an improvement over the prior art for feces management, not urine or fluid flow.

172. I therefore disagree with Dr. Pourdeyhimi’s assessment that Nakazawa and Ponomarenko “are in the same field as the ’138 patent because they all relate to the structure and design of absorbent articles.” See Pourdeyhimi

Declaration ¶ 239. A POSA would not see an invention designed for feces management and immobilization, like Ponomarenko, and be motivated to simply transfer the feces immobilization elements from that reference to an invention like Nakazawa, which is designed for fluid diffusion. In my opinion, Nakazawa and Ponomarenko are addressing entirely different problems. A POSA would not see a fluid diffusion sheet like Nakazawa's and be motivated to replace it with Ponomarenko's multi-layer feces immobilization sublayer.

173. Even when fluid or urine is mentioned with respect to sublayer 30 in Ponomarenko, it is only with respect to the pressure resistance of the sublayer after wetting "to ensure the feces remains immobilized even after the sublayer has been wetted by liquid exudates and submitted to pressure." Ponomarenko at 1:65-2:3.

174. In addition, Dr. Pourdeyhimmi makes no attempt to explain why a POSA would be motivated to move the feces immobilization sublayer from just below the topsheet of Ponomarenko to the position of the diffusion sheet in Nakazawa, between two absorbent cores. A POSA would understand that this design is illogical and would not work.

175. First, if the feces immobilization sublayer were disposed below the absorbent core, it would never be exposed to feces, as the top surface of the absorbent core, rather than the sublayer, would interface with the feces and would lead to smearing of feces and wearer discomfort.

176. Second, as with Glaug, placing Ponomarenko’s sublayer below the absorbent core would create additional pressure on the sublayer both during manufacture and during use. This is because sandwiching a 3D sublayer with holes designed for feces management exerts compressive forces on the sublayer not contemplated by either Nakazawa or Ponomarenko. Indeed, Ponomarenko is concerned with the pressure resistance of the sublayer (*see* Ponomarenko at 1:65-2:3) such that a POSA would not be motivated to insert that sublayer into the center of a product where it would be subject to greater forces and pressure—during both manufacture and use—based on the teachings of Ponomarenko.

177. Further, incontinence products designed for feces management, like Ponomarenko, are intended to handle only one BM, as a consumer would change the product quickly after the first BM due to discomfort and odor. Conversely, a product like Nakazawa is intended to handle multiple insults of fluid and is not intended to be used for BM management. *See* Nakazawa at [0029] (“These absorbent articles can be used in disposable diapers (for example, tape-style diapers, pants-style diapers, urine pads, etc.) that absorb excretory fluids such as urine, sanitary napkins that absorb menstrual blood, and vaginal discharge sheets that absorb vaginal discharge.”). This context provides further rationale for why a POSA would not be motivated to combine Nakazawa and Ponomarenko.

178. I believe that Dr. Pourdeyhimi is intentionally minimizing the differences in the layers in Nakazawa and Ponomarenko in order to support his opinion. Ponomarenko needs a weak, BM-porous topsheet designed to rupture along with an unbonded fibrous layer that is designed to rupture and extend into the holes formed for feces management. Conversely, Nakazawa has a diffusion layer that is inserted between absorbent cores that must have a higher permeability than the absorbent layers that it is positioned between.

179. In my opinion, a POSA would not be motivated to replace the diffusion sheet in Nakazawa with the feces immobilization sublayer from Ponomarenko because such a modification would disrupt the flow of fluid required by the diffusion sheet in Nakazawa. Indeed, additional interfaces within an absorbent article—such as those introduced by the addition of layers as suggested by Dr. Pourdeyhimi—may have negative consequences to fluid distribution as described above with respect to Ground II. Further, adding layers can cause unexpected problems given that “very little is known about the flow through the interfaces that exist between the different components” in an absorbent article. *See* Ex1009-White at 246-47.

180. Dr. Pourdeyhimi fails to address these issues. Rather, Dr. Pourdeyhimi simply concludes that “[t]he difference between Nakazawa-’190’s diffusion sheet and Ponomarenko-’236’s sublayer is that Ponomarenko-’236

describes having additional layers, including non-perforated fibrous layers in addition to the perforated polymeric film.” Pourdeyhimi Declaration ¶ 241. In other words, according to Dr. Pourdeyhimi, a layer is a layer, and two layers for fecal management are interchangeable for one layer for urine management. I disagree with Dr. Pourdeyhimi on this point. As described above, the difference between a single-layer diffusion sheet and a multi-layer feces immobilization sublayer is significant and the materials and layers are not interchangeable. As a result, I disagree with Dr. Pourdeyhimi that a POSA would be motivated to combine Nakazawa with sublayer 30 from Ponomarenko to arrive at the claimed fluid flow control structure.

- b) *A POSA would not be motivated to add additional layers to an absorbent article due to cost and manufacturing complexity.*

181. Further, as explained in Section VII.B.1, adding layers to an absorbent article adds manufacturing complexity and increases cost. Adding these additional materials and layers can increase downtime and costs and can make a marginally profitable product unprofitable.

182. These substitutions can easily cost hundreds of thousands or even millions of dollars. In my opinion, a POSA would not be motivated to add to or modify layers in an article that is known to work because of these costs, and

further because of the likelihood that such additions or modifications would make the article less effective.

183. Similarly, Ponomarenko has designed a complex topsheet and sublayer system that would be very expensive and cumbersome to manufacture. Due to the improved performance of this feces management and immobilization system, the product would necessarily have less absorbent material to function as designed. This is because the added bulk and cost of Ponomarenko's feces management and immobilization system would require removal of absorbent to compensate. As a result, a POSA would not be motivated to combine Nakazawa with Ponomarenko because the resulting design would be less efficient in rapidly diffusing large insults of fluid, which is the main purpose behind Nakazawa.

184. I evaluated the Ponomarenko reference when I was working on designing and manufacturing absorbent articles. At the time, we decided that the design of Ponomarenko would be too difficult, expensive, and complex to manufacture. In my opinion, a POSA around 2011 would not have been motivated to take the sublayer of Ponomarenko and incorporate it into an absorbent urinary incontinence product because of the perceived manufacturing difficulties of that design and because it was understood at that time that Ponomarenko only taught an improved feces management and immobilization system.

- c) *A POSA would not have a reasonable expectation of success in modifying Nakazawa to incorporate the fluid acquisition system from Ponomarenko.*

185. I disagree that the combination of the diffusion sheet from Nakazawa with the sublayer from Ponomarenko would “involve the simple substitution of one known element...for another” as Dr. Pourdeyhimi suggests. Pourdeyhimi Declaration ¶ 244. Replacing one layer in Nakazawa with two separate layers from Ponomarenko requires, among other things, another roll handling system which would include two unwind brackets, an automatic splicer, perhaps a second material cutting station, glue or ultrasonic bonding equipment, a new back of electronic controls and cutting and moving half a machine to add in this new section. This would be a very time-consuming process using very expensive and temperamental equipment and a POSA would not have expected success in making these large changes.

186. Finally, Dr. Pourdeyhimi opines that because acquisition/distribution layers were known prior to the '138 Patent, that a POSA would have a reasonable expectation of success in modifying, swapping, or combining them. Pourdeyhimi Declaration ¶ 245. I disagree. Just because a particular type of layer is well-known in the industry does not mean that all such layers are interchangeable. As discussed above, a sublayer with layers for storing and immobilizing feces is very different from a diffusion sheet for moving fluid both up into an upper absorbent

core and down into a lower absorbent core. A POSA would not expect these layers to work interchangeably and would not have a reasonable expectation of success in modifying them in the way Dr. Pourdeyhimi suggests. Dr. Pourdeyhimi's proposed combinations and modifications are driven entirely by hindsight rather than any motivation present in the art at the time of the '138 Patent. As a result, his opinions are unpersuasive.

3. Claim 2 – “wherein the first perforated polymeric layer has a basis weigh of from 60 g/m² to 100 g/m²”

187. In addition, the combination of Nakazawa and Ponomarenko does not meet the additional limitation of claim 2, “wherein the first perforated polymeric layer has a basis weight of from 60 g/m² to 100 g/m²” because one of skill in the art would not be motivated to modify diffusion sheet 63 of Nakazawa by replacing it with sublayer 30 of Ponomarenko.

188. The diffusion sheet disclosed in Nakazawa has either a basis weight of 19.5 g/m² (bulky air-porous nonwoven fabric) or 36.3 g/m² (porous film). *See* Nakazawa at [0176]-[0177]. Nakazawa also discloses a test to determine whether a diffusion sheet should be considered. *See* Nakazawa [180]-[186]. The key consideration for the selection of a diffusion sheet in Nakazawa is whether the diffusion sheet is more liquid permeable than the absorbent material. *See* Nakazawa [180]-[186].

189. Ponomarenko states that “[i]t may also be preferred that the sublayer (30) comprises, in addition to the fibrous acquisition layer above, one or more layers of nonwoven acquisition layers....” 10:4-6. For this additional layer of sublayer 30, Ponomarenko states “[i]t is preferred that such materials have a high basis weight, i.e. of 40 gsm or more, preferably even 60 gsm.” In describing sublayer 30, Ponomarenko states that “is typically compression resistant after wetting.... This ensures an excellent feces storage and isolation....” Ponomarenko at 6:43-47. Further, Ponomarenko states that “[t]he holes (31) of the sublayer (30) herein are capable to store and immobilize feces and they include blind holes (31).” Ponomarenko at 7:27-28. Blind holes are holes that do not penetrate through a layer.

190. Thus, a POSA would not be motivated to modify the single diffusion sheet in Nakazawa—having a basis weight of basis weight of 19.5 g/m² (bulky air-porous nonwoven fabric) or 36.3 g/m² (porous film)—by replacing it with the multi-layer sublayer 30 of Ponomarenko wherein one possible layer (that may not even be perforated) has a high basis weight, *i.e.* 40 gsm or more, preferably even 60 gsm. In fact, as discussed throughout my report for Grounds II-IV, Nakazawa teaches away from a multi-layer structure. Ponomarenko provides no explanation why a high basis weight should be chosen for this additional layer of sublayer 30. When Nakazawa used a nonwoven fabric material as its diffusion sheet, it chose a

lower basis weight than when it used a porous film. And Ponomarenko is focused on feces immobilization; Nakazawa is not. Additionally, Ponomarenko does not compare the liquid permeability of any of the materials in sublayer 30 to the absorbent material. Thus, a POSA would not be motivated to substitute the high basis weight, dual-layer, feces-isolating sublayer from Ponomarenko in place of the low basis weight, single-layer, fluid-diffusing sheet in Nakazawa.

4. Claims 2-5, 20-22, and 24-25

191. Because the combination of Nakazawa and Ponomarenko does not render claim 1 of the '138 Patent obvious, and because I understand that claims 2-5, 20-22, and 24-25 all depend from claim 1, it is my opinion that the combination of Nakazawa and Ponomarenko does not render claims 2-5, 20-22, and 24-25 of the '138 Patent obvious.

192. In addition, the combination of Nakazawa and Ponomarenko does not meet the additional limitation of claim 25, “wherein the fluid permeable top sheet is in contact with the fluid flow control structure via the opening, such that a cavity is formed along the longitudinal center line of the absorbent article” because the combination of Nakazawa and Ponomarenko does not render obvious the fluid flow control structure limitation of claim 25.

E. Ground V: Claims 1, 3-5, 21-22, and 24-25 Are Not Anticipated by Nakazawa-'190

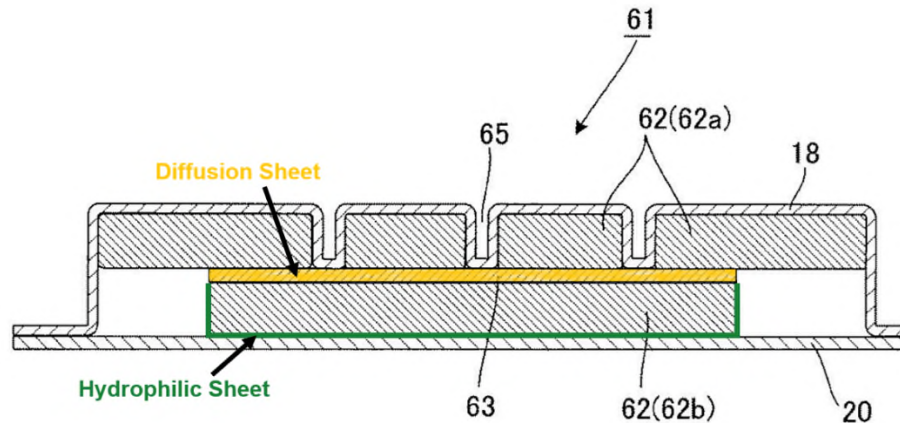
1. Claim Element 1[h]: “said fluid flow control structure being a layered structure comprising a non-perforated fibrous polymeric layer and a first perforated polymeric layer”

193. Dr. Pourdeyhimi opines that diffusion sheet 63 and an unlabeled hydrophilic sheet in Nakazawa in combination form a fluid flow control structure as described and claimed in the '138 Patent. I disagree.

194. Dr. Pourdeyhimi correctly points to a disclosure in Nakazawa that “the absorbent material is generally wrapped on the back surface and side surfaces with a hydrophilic sheet.” Pourdeyhimi Declaration at ¶ 280. In other words, the only disclosure Dr. Pourdeyhimi points to for this limitation describes that the absorbent material is wrapped “on the back surface and side surfaces with a hydrophilic sheet,” not on the top surface. See Nakazawa, [0082], [0084]. A hydrophilic sheet disposed on the back and sides of the absorbent core is not a core wrap, it is more of a cradle.

195. Dr. Pourdeyhimi, however, annotates Figure 14A incorrectly given this disclosure. See Pourdeyhimi Declaration at ¶ 281. I disagree with Dr. Pourdeyhimi’s doctored and misleading diagram. In my opinion, the diagram should at most only have the back and side surfaces wrapped with a hydrophilic sheet as shown below:

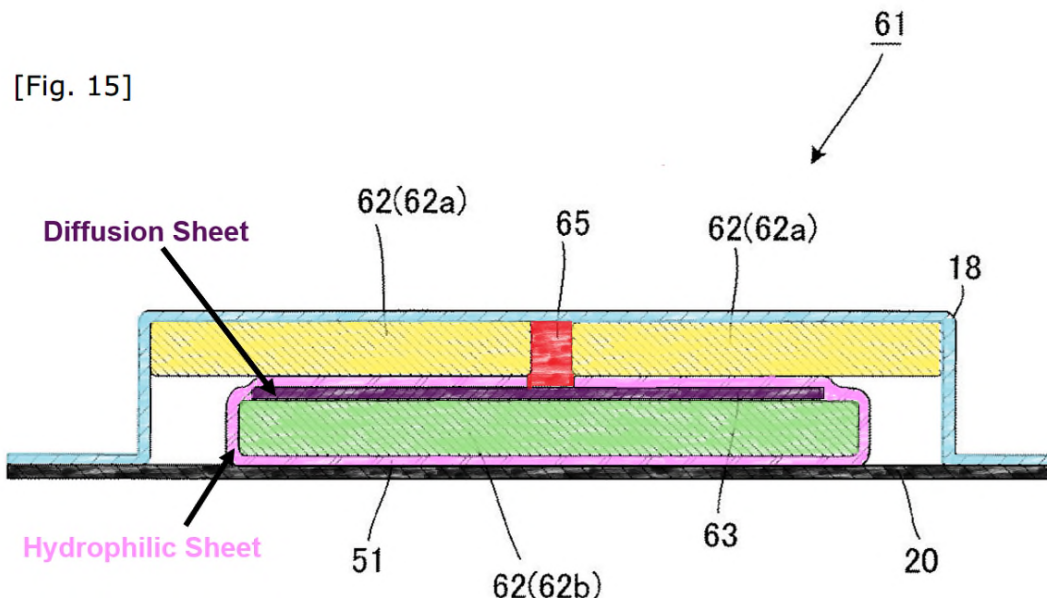
[Fig. 14A]



This design contains no interface between the diffusion sheet and the hydrophilic sheet, such that they, by definition, cannot form a “layered structure” as required by claim 1 of the ’138 Patent.

196. Further, even if the absorbent core were wrapped with the hydrophilic sheet as Dr. Pourdeyhimi suggests, this does not convert the diffusion sheet and hydrophilic sheet into a fluid flow control structure as described and claimed in the ’138 Patent. The purpose of the hydrophilic sheet is “to prevent leakage of superabsorbent polymer and to prevent deformation of the absorbent material on the production line.” Nakazawa, [0082]. As noted above, and as agreed by Dr. Pourdeyhimi, the layers of the fluid flow control structure must “provide the same functionality.” Pourdeyhimi Declaration ¶ 105. There is no disclosure in the portions of Nakazawa cited by Dr. Pourdeyhimi that the hydrophilic sheet participates in fluid flow control, either alone or in conjunction with the diffusion sheet.

197. Further, other portions of Nakazawa accord with the teaching that the absorbent core is only wrapped on the sides and back with the hydrophilic sheet. For example, in the very next paragraph after what Dr. Pourdeyhimi cites, Nakazawa discloses an embodiment where the second absorbent material is wrapped in the hydrophilic sheet “except for the region corresponding to the openings in the hole portions 65 formed in the first absorbent material 62a. This configuration has the advantage of keeping SAP from leaking from the second absorbent material ***without impeding permeation*** of excretory fluid from the hole portions to the diffusion sheet and providing shape stability to the second absorbent material.” Nakazawa, [0085]; *see also* Nakazawa, Fig. 15:



198. These disclosures make clear that diffusion sheet 63 is intentionally never in contact with any other layer between it and the absorbent article at

opening 65, and Nakazawa explicitly teaches that such a design would impede permeation of fluid through diffusion sheet 63 to the lower absorbent core.

199. It is also clear that Dr. Pourdeyhimi does not reference this embodiment in his opinion because in this embodiment, the topsheet is not in direct contact even with what Dr. Pourdeyhimi considers the “fluid flow control structure” via the opening as required by claim element 1[j].

200. As a result of the above, it is my opinion that Nakazawa does not anticipate the fluid flow control structure limitation of claim 1 of the '138 Patent.

2. Claim 21 – “wherein the opening extends through the entire crotch portion of the absorbent article”

201. Dr. Pourdeyhimi opines that the hole portion 65 of Nakazawa extends through the entire crotch portion of the absorbent article. Pourdeyhimi Declaration ¶ 213. I disagree, and I find Dr. Pourdeyhimi’s annotated diagrams to be incorrect, misleading, and conclusory for the reasons set forth in Section X.B.3.

3. Claims 3-5, 21-22, and 24-25

202. Because Nakazawa does not anticipate claim 1 of the '138 Patent, and because I understand that claims 3-5, 21-22, and 24-25 all depend from claim 1, it is my opinion that Nakazawa does not anticipate claims 3-5, 20-22, and 24-25 of the '138 Patent.

203. In addition, Nakazawa does not meet the additional limitation of claim 25, “wherein the fluid permeable top sheet is in contact with the fluid flow control

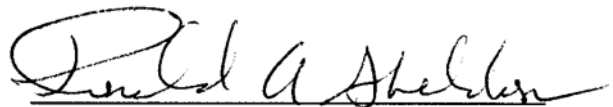
structure via the opening, such that a cavity is formed along the longitudinal center line of the absorbent article” because Nakazawa does not disclose the fluid flow control structure limitation of claim 25.

XI. CONCLUSION

204. The Challenged Claims of the '138 Patent are not anticipated or obvious in view of the Grounds set forth by the Petition and the Pourdeyhimi Declaration.

205. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and that these statements were made with 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: February 20, 2025


Donald Sheldon