

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Casper Sleep Inc.,
Petitioner,

v.

Werner Media Partners, LLC,
Patent Owner.

U.S. Patent 10,842,301
IPR 2024-00474

PATENT OWNER'S DEMONSTRATIVES FOR ORAL ARGUMENT

Pursuant to 37 C.F.R. § 42.70(b) and the Board's Order (Paper 42), Patent Owner files the enclosed demonstratives for the oral hearing scheduled for January 24, 2025. In addition, Patent Owner intends to use any of physical exhibits 1054, 1066, 1068, 1070, and 1072 as demonstratives during oral argument.

Dated: January 20, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e), service was made on Petitioner as detailed below.

Date of Service January 20, 2025

Manner of Service Email

Document Served - This Patent Owner's Demonstratives for Oral Argument

Persons Served Mark I. Koffsky
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Dated: January 20, 2025

/s Greg M. Popowitz
Greg M. Popowitz

Werner Media Partners, LLC (Patent Owner)

Oral Argument Demonstrative Aid

January 24, 2025

IPR2024-00474

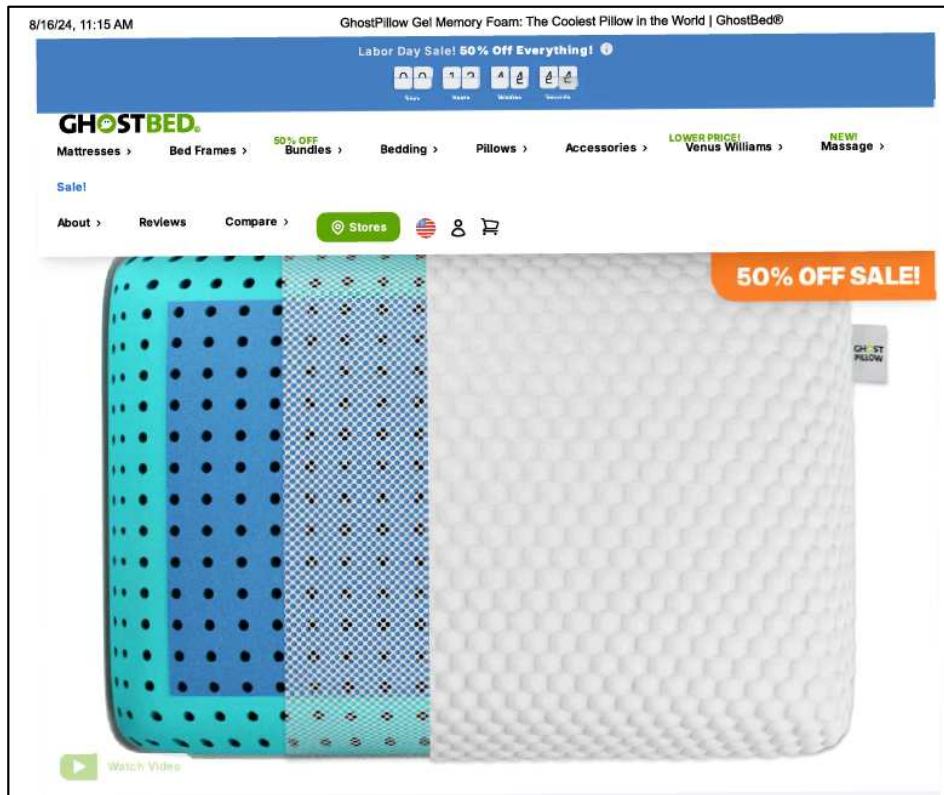
U.S. Patent No. 10,842,301 B2

Overview of '301 Patent: Claims 1 and 2

Claim 1	Claim 2
A process for manufacturing bedding which comprises:	A process for manufacturing bedding which comprises:
(a) providing a solid, resilient, compressible foam block, said block having a surface;	(a) providing a solid, resilient, compressible foam block, said block having a surface;
(b) applying a phase change material to said surface;	(b) applying a phase change material to said surface;
(c) forming a hole into said block and through said surface; and	(c) forming a hole into said block and through said surface;
(d) cracking said block.	(d) compressing said block by pressing on said surface before the forming of the hole; and
	(e) performing the forming of the hole while said block is compressed.

Exh. 1001; Response p.4

GhostPillow Made Using '301 Patent Process



Exh. 2003



Exh. 1055

Patent Owner Production Process (1 of 3)

Production Procedure		
1	Unfinished Lavender scented pillow	
2	Twice polished for one side to be used for fixing composit PCM	
3	Material with PCM	

Exh. 2022



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

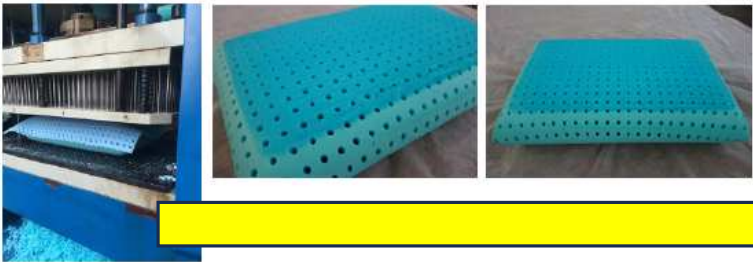
Patent Owner Production Process (2 of 3)

4	Brushed twice PCM material on one side	
5	Air drying	

Exh. 2022

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Patent Owner Production Process (3 of 3)

6	Punching on the pillow	
7	Putting pillow into the cover	
8	Final Package	



Exh. 2022

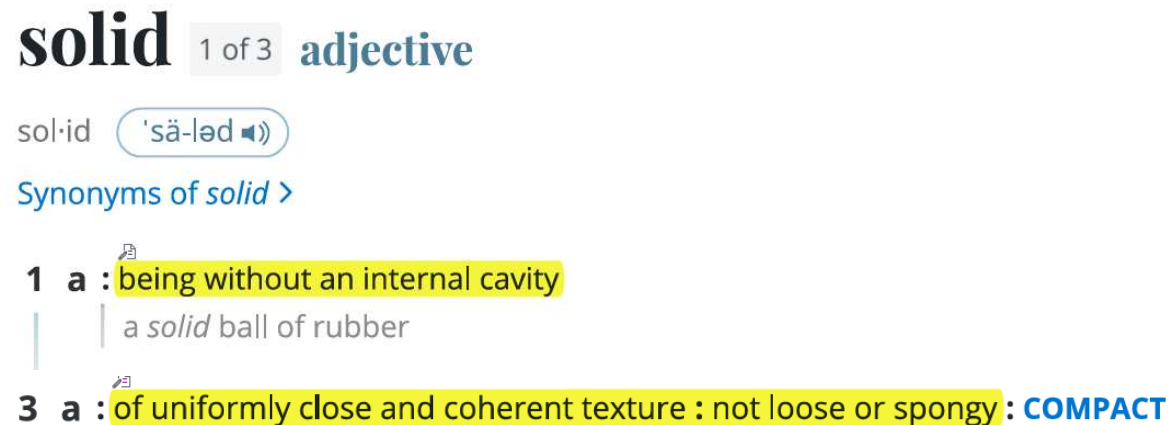
DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Person of Ordinary Skill in the Art (POSITA)

- Petitioner’s proposed POSITA “would have **at least** a bachelor’s degree in **engineering** **and** several years of experience designing foam support surfaces, cushioning products, or an equivalent level of education and experience” (emphasis added) (Petition, p. 8)
- A bachelor’s degree is not required; a person with practical, hands-on experience/skill in the bedding industry is sufficient (Response, p. 5)
- Petitioner:
 - Mr. Shiroff – bachelor of science in accounting (Exh. 2029, 9:2-7)
 - Dr. Brienza – bachelor of science in electrical engineering (Exh. 1006, ¶ 4)
- Patent Owner:
 - Mr. Quinn – bachelor of arts in communications and marketing (Exh. 2013, ¶ 8)
 - Mr. Gross – bachelor of arts (Exh. 2001, ¶ 6)
 - Mr. Werner – bachelor of science in accounting/economics/statistics (Exh. 1026)

Claim Construction - Solid

- Claims 1 and 2 of '301 Patent:
 - “Providing a **solid**, resilient compressible foam block...” (emphasis added)



Exh. 2010

Claim Construction

- Claim 2: “cracking said block”

Cracking a foam block has been found to enhance the comfort and feel in bedding. Cracking is a term for processing a foam block with a roller press. A block of solid, resilient, compressible foam is passed through a roller press twice. While a foam block that has been rolled once has improved compression and resilience characteristics, passing the foam block through the roller twice provides optimal characteristics. The roller press opens some of the closed cells that make up the foam block. A foam block that has

Exh. 1001, col. 3, lines 39-47

Exh. 1010, Fig 6

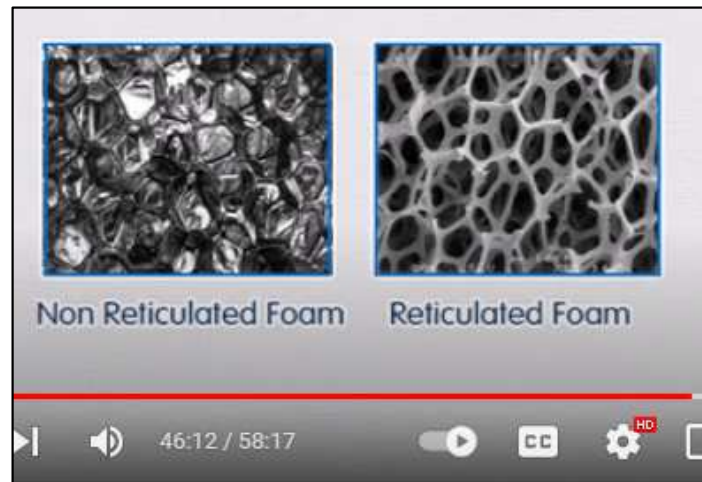


Exh. 1010, Fig 8

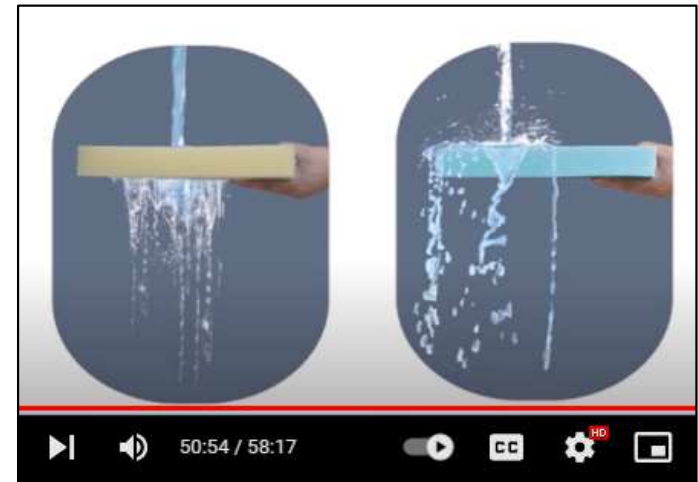
Schneider



Exh. 2001 ¶ 65



Exhs. 2001 ¶ 63; 2009



Exhs. 2001 ¶ 64; 2009

Schneider (Exhibit 1010)

[0029] In some embodiments, the washable mattress comprises a microencapsulated phase change material. For instance, a second eight and one-quarter centimeter (8.25 cm) or three and one-quarter inch (3.25") removable layer of memory foam can be coated with a layer of phase change gel material. This phase change gel material may be similar to the phase change gel material described in International Patent Application Number WO2011/107849, which is incorporated herein by reference. The phase change gel comprises extremely small capsules (typically five (5) to forty (40) microns for use in foam production) that permanently contain phase change materials (PCMs) and allow the PCM to absorb thermal energy when exposed to heat. Test results demonstrate the ability of Phase Change Gel to provide significant cooling benefits when applied to flexible polyurethane foam.

Exh. 1010 ¶ 0029

PCM vs. Gel

- Mr. Shiroff's background is on the **retail** side of the bedding industry

9 Q And in that vein, do you -- are the
10 characteristics of gel, aside from the actual cooling
11 effects, but just the actual chemical makeup, is the gel
12 different than PCM?

22 I think that phase change material used in
23 your clients GhostPillow is a different kind of phase
24 change material than gel and I think it also absorbs
25 heat and creates a cooling effect and because it's
1 applied directly to the surface as compared to mixed in
2 with all the other ingredients of polyurethane, I think
3 it probably provides more of a cooling effect because of
4 the way it was utilized.

Exh. 2029, 59:9-12, 59:22-60:4

Fohm Pillow (Kickstarter)

- Exhibit 1084 - <https://vimeo.com/111694480>



Exh. 1084, 0:54 seconds



Exh. 1084, 0:59 seconds

Lievestro in View of Schneider

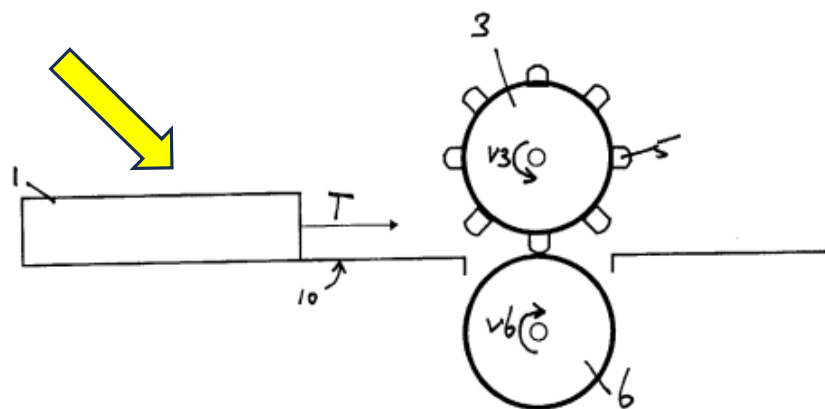


Fig. 3

Exh. 1013, Fig 3

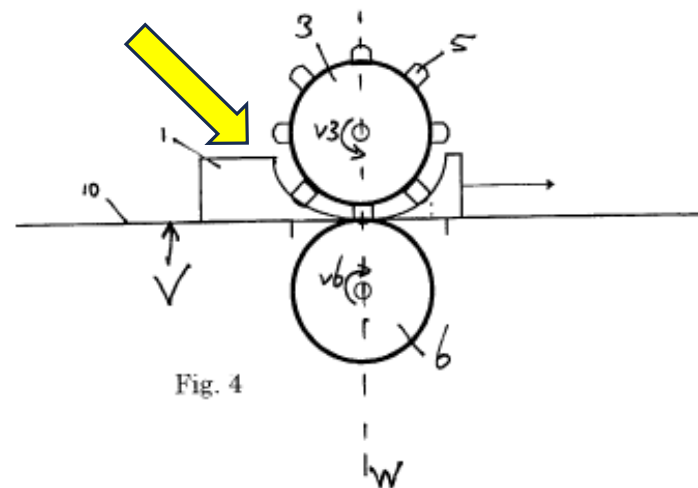
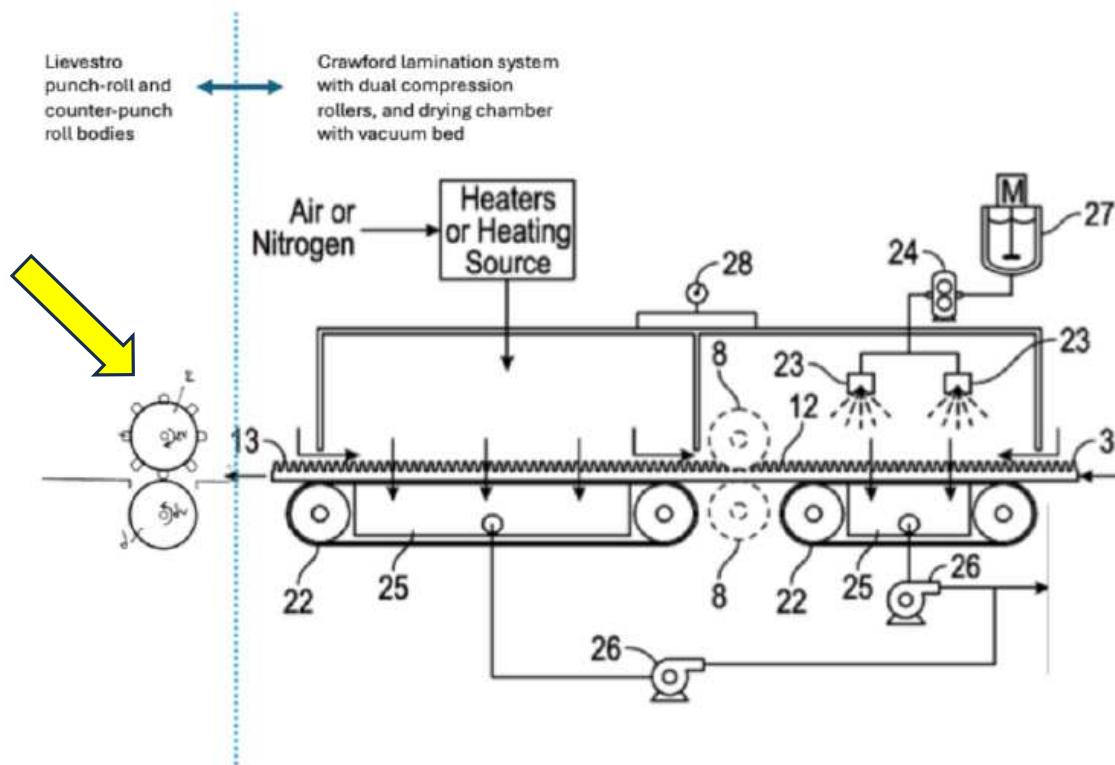


Fig. 4

Exh. 1013, Fig. 4

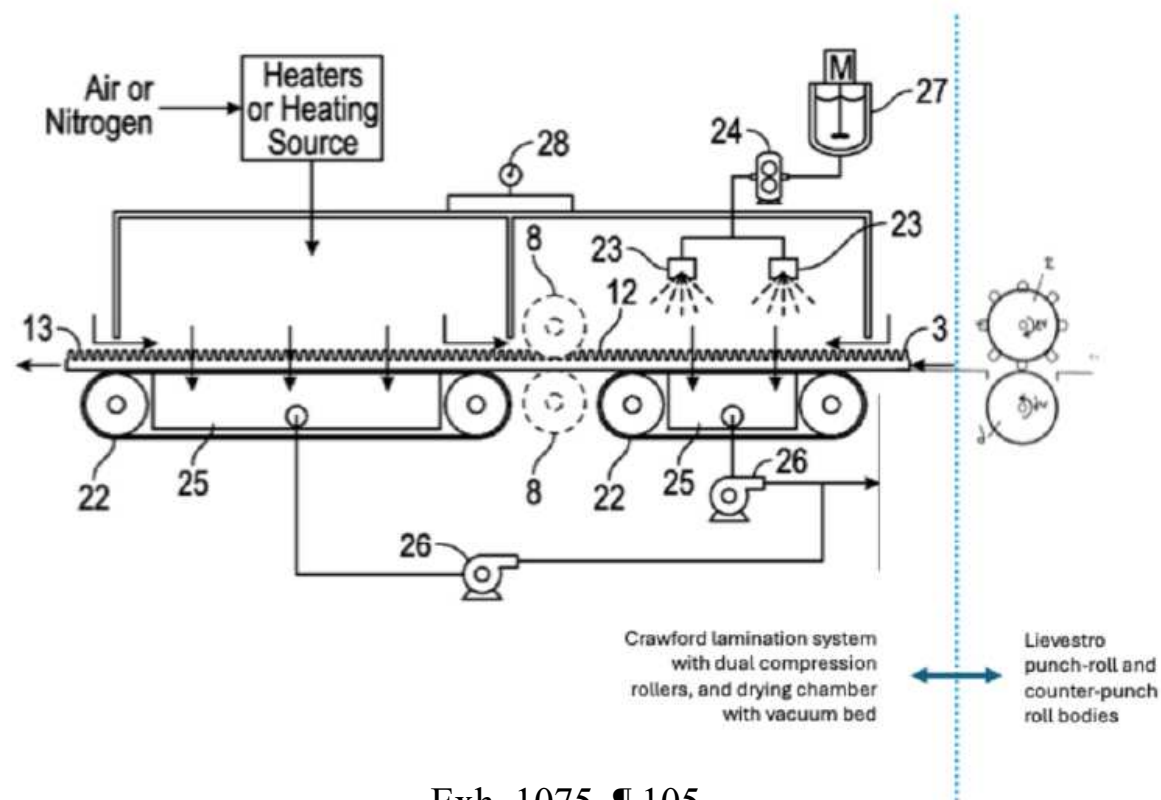
Crawford in View of Liestro (After)



Exh. 1075, ¶ 103

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

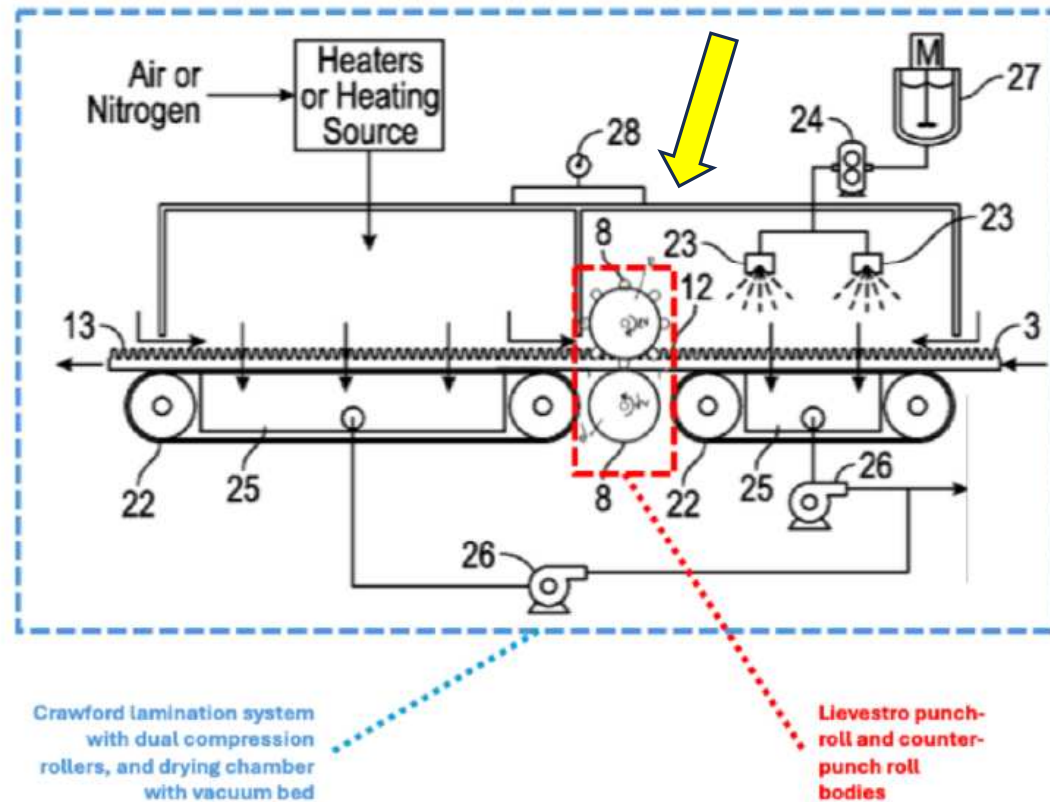
Crawford in View of Liestro (Before)



Exh. 1075, ¶ 105

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

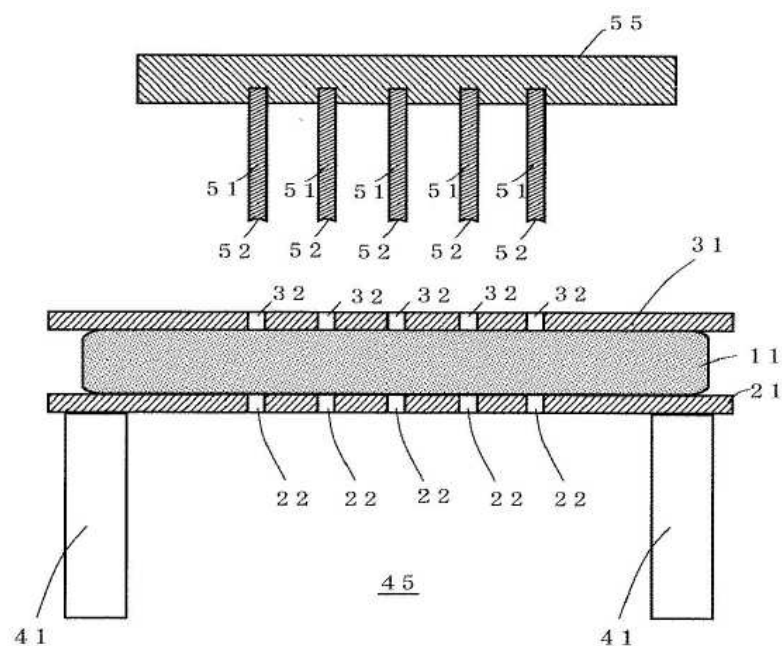
Crawford in View of Lievestro (**During**)



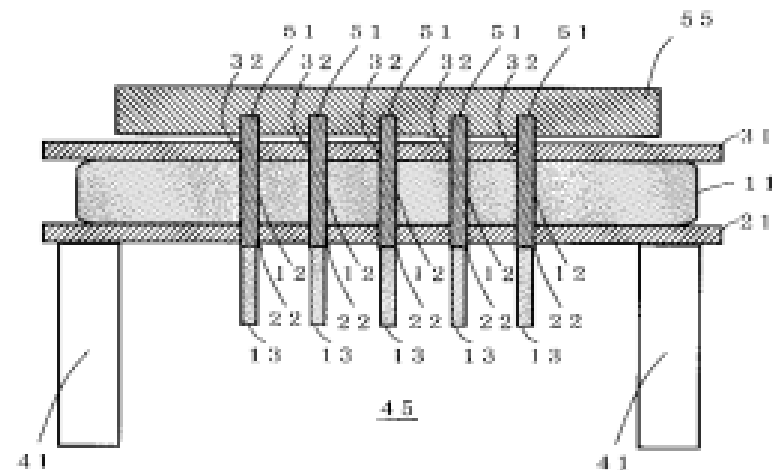
Exh. 1075, ¶ 107

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Ohta in View of Schneider/Crawford



Exh. 1009, Fig. 2



Exh. 1009, Fig. 3

Secondary Considerations

- Mr. Shiroff is NOT a Credible POSITA
- Element Testing (third party) and Unexpected Results
- Copying by Competing Brands
- The Defined Market has a Nexus to the '301 Patent Process
- Market Survey of GhostPillow Confirms Cooling Nexus
- Length of Time Between Prior Art and '301 Patent

David Shiroff is Not a Credible POSITA

5	previous version. But in terms some of the high level
6	testing that you're referring to that are more
7	 manufacturing based tests, no, I really wasn't involved
8	in that. I was just involved in kind of the testing
9	that you would do once the product and prototypes were
10	out and I would test them to see if they kind of  met my
11	needs as a retailer.  I kind of looked at it through a
12	retailer's lens, if that makes sense, not so much
13	through a manufacturer's lens.

Exh. 2029, 26:5-13

David Shiroff is Not a Credible POSITA

23	BY MR. POPOWITZ:
24	Q Okay. Are you aware of given your experience
25	in bedding industry and the manufacturing facilities

1	that you've described, have you ever seen holes being
2	placed into foam without some type of compression or, as
3	you noted in the Boers Techniek Drill, some level of
4	push in the foam to hold it in place?
5	MR. KOFFSKY: Objection.
6	 THE WITNESS: I'm not sure I've ever witnessed
7	holes being punched in foam. I can't specifically
8	remember seeing that live.

Exh. 2029, 76:24-77:13

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

9	Q	So it's fair to say you learned about the
10		process to put holes into foam blocks in preparing for
11		this IPR; is that fair?
12	A	The idea of compressing before and during hole
13		punching or not compressing before or during hole
14		punching, the first time I ever thought that about that
15		was as an expert in this case. I would have looked at
16		the two as identical. It wouldn't have made a
17		difference to me as somebody defining products. I
18		simply just want a product that has holes in it if
19		that's my goal. I never thought about the distinction
20		of the holes being created with or without compression
21		until I was retained in this matter.
22	Q	Okay. So it's fair to say back in the 2016,
23		2017 time frame you didn't have that understanding
24		either, correct?
25		MR. KOFFSKY: Objection.
1	THE WITNESS:	Yes. I certainly didn't, if I
2		didn't just recently. I think that would be fair
3		to say.

Exh. 2029, 78:9-79:3

David Shiroff Contradictions – Drilling Foam

Shiroff Declaration (Exh. 1076, ¶ 49)

<https://www.youtube.com/watch?v=vflxKFL24s4>. (Exhibit 1079). Screenshots of this video set forth below demonstrate: a) the lowering of the drills into the foam showing no compression of the foam being drilled (at 0:49); b) the drilling process extruding foam from the newly-formed drilled holes (at 0:53); c) the raising of the drills from the foam (at 0:55); and d) the never-compressed foam with the newly-drilled holes (at 0:58).

Shiroff Transcript (Exh. 2029, 72:14-73:1)

DEMONSTRATIVE EXHIBIT

14	Q	And where did you form your opinion that it's
15		not -- that the machine is not compressing the foam
16		while it's drilling?
17	A	So there were two different ways that I
18		formulated my opinion. The first was watching the
19		videos that you can see contained in the declaration.
20		After the declaration, I took it upon myself in
21		preparation of this deposition to reach out to the
22		company and I had correspondence with the owner of the
23		company who confirmed to me that they do not compress
24		the pillows in their machines. That they hold it in
25		place by pushing down 1 centimeter and the drill goes

1		through the pillow when it is not compressed.
2	Q	You just said that it presses it down 1
3		centimeter; is that accurate?
4	A	He said they hold it in place with 1
5		centimeter of push, but then drill while it's not
6		compressed. He described it as holding it in place,
7		only enough pressure to hold it in place.

David Shiroff Deposition (Exh. 2029)

1	Q	Understood. And in your experience with PCM
2		specifically, do you know if there is a specific cure
3		time or recommended cure time for that PCM to dry during
4		the manufacturing process?
5	A	Yes.  My level of manufacturing experience
6		does not include the amount of time required to cure PCM
7		applications.
8	Q	Okay. But you don't know if that's a matter
9		of minutes versus hours or anything of that nature?
10	A	I don't and I would not want to speculate.

(Exh. 2029, 37:1-10)

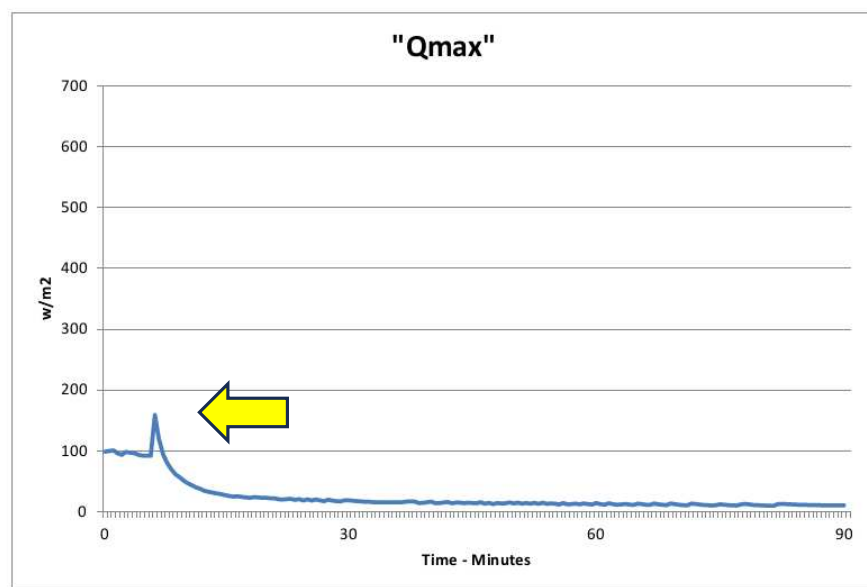
2	Q	Have you ever heard of the PCM growing mold
3		because it's not cured properly?
4	A	 Have I ever heard of PCM growing mold? I
5		would answer that by saying no, not PCM growing mold. I
6		have heard of polyurethane foam growing mold for not
7		being cured correctly and that is something I have dealt
8		with, but never PCM.
9	Q	And I apologize, when I'm referring to PCM,
10		it's really the PCM application on the pillow, on the
11		pillow itself.
12	A	Yeah.  It's just not something I've
13		encountered or heard about in the industry. Yeah.

(Exh. 2029, 48:2-13)

Element Testing and Q-Max

"Qmax" is the peak heat flow (Q) value registered by the hot plate device (dry test only).

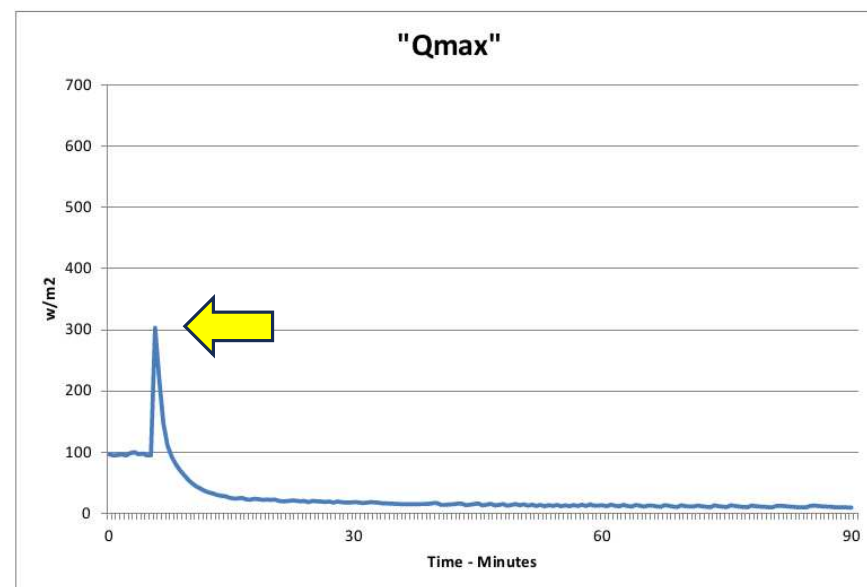
"Qmax"
158.70 w/m ²



Exh. 2017, p.5 – GB SolidFoam

"Qmax" is the peak heat flow (Q) value registered by the hot plate device (dry test only).

"Qmax"
303.01 w/m ²



Exh. 2017, p.10 – GB Punched PCM

Unexpected Results

Test	Solid Foam	Punched Foam	Diff #	Diff %
QMAX	158.7	303.1	144.4	90.99%

Exh. 2013, ¶ 81

- Patent Owner's Expert Mr. Quinn expected a 20-30% Q-Max Improvement, not 90% for the process created by the '301 Patent process compared to a standard solid foam block (Exh. 2013, ¶ 97)

Copying by Competing Brands



Exhs. 2013 ¶ 92; 2015, p. 6

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

David Shiroff Contradictions – Defined Market

Declaration (Exhibit 1076 ¶ 60)

Exhibit 1078, 96:16-97:15). But this definition of “a market” is far too narrow and, at a minimum, should have consisted of at least all  memory foam pillows with  cooling features. This population of products would have more accurately reflected the category (or market) that the GhostPillow and Casper Snow Pillow actually participate in.

Transcript (Exhibit 2029, 106:2-9)

2	Q	So the method of production is important in
3		assessing that, correct?
4	MR. KOFFSKY:	Objection.
5	THE WITNESS:	Well,  the method of
6		manufacturing in a market share analysis in a case
7		like this, I think it was imperative. I think it
8		was the only thing he was asked to do and he
9		failed.

24	I think memory foam was a game changer and I would
25	probably say that to me the category of pillows if I was

1	doing a market share analysis, it would include memory
2	foam pillows. Because I think there's a significant
3	difference between pillows that use memory foam and
4	pillows that use a cheap poly fill and I think there's a
5	big difference. The third category that I think of -- I
6	think of three categories in pillows. I think there's a
7	market for memory foam pillows, a market for inexpensive
8	poly fill pillows and a market for down pillows and
9	there are whole different grades of down pillows.
10	Q Where are you getting that delineation of
11	those three products? Is that your personal opinion or
12	is that something in the market? How --
13	A It's really my personal opinion. I'm just
14	sharing with you how I thought about pillows during my
15	30 years in the industry.

(Exhibit 2029, 93:24-100:15)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

10	cooling features. So I'm trying to understand why you
11	now added the narrowing of cooling features with memory
12	foam in your definition in the declaration?
13	MR. KOFFSKY: Objection.
14	THE WITNESS: Yeah. Because I think if he
15	wanted to include cooling it would have allowed him
16	to have a more manageable population that would
17	have been a project he could have achieved. There
18	are probably thousands of companies, at least
19	hundreds, that bring memory foam pillows to the
20	marketplace. There are so many of them it boggles
21	the mind. So knowing that that probably wasn't
22	realistic, I added the cooling features because I
23	think it would have at least brought it down to
24	maybe 100 or 200, still very fragmented, but at
25	least not thousands and I thought that that would

(Exhibit 2029, 99:10-24)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Amazon Search Results – Exhibit 1043, p.1

10/31/24, 3:32 PM Amazon.com : Molded Gel Memory

Delivering to West Hemp... 11552
[Update location](#)

All ▼ **Molded Gel Memory Foam PC**

All Medical Care ▼ Best Sellers Amazon Basics Prime ▼ Today's Deals New R

1-48 of 184 results for **"Molded Gel Memory Foam PCM pillow with punched holes"**

Results
Check each product page for other buying options. Price and other details may vary based on product size and color.

 Sealy Molded Bed Pillow for Pressure Relief, Adaptive Memory Foam with Washable Knit Cover, Standard,... 8,962 2K+ bought in past month	Overall Pick  WEEKENDER Gel Memory Foam Pillow – Queen Size – 1-Pack – Medium Plush Feel – Neck & Shoulder Support – Fo... Options: 4 sizes 41,114	 Vaverto Gel Memory Foam Pillow – Standard Size, 1 Pack, Firm Pillow for Neck and Shoulder Support, Orthopedi... Options: 6 sizes
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DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Amazon Search Results – Exhibit 1043



Nestl Adjustable **Shredded Gel Memory Foam Fill**, Memory Foam & Poly **Fill** for Your Adjustable Ice Pillows -...

313

100+ bought in past month

\$19⁹⁹

FREE delivery **Tue, Nov 5** on \$35.00

Exh. 1043, p. 3



Coop Home Goods Extra Oomph Cool+ **Pillow Fill**, Gel-Infused, Plus Shaped Memory **Foam Filling** for More Airflow,...

Options: 5 sizes

1,676

300+ bought in past month

\$26⁰⁰

FREE delivery **Tue, Nov 5** on \$35.00 of items shipped by Amazon



QUTOOL Cooling Pillows for Sleeping 2 Pack, **Shredded Memory Foam Bed Pillows** Queen Size Set of 2, Gel Pillo...

Options: 7 sizes

17,008

8K+ bought in past month

\$48⁹⁹ (\$24.50/Count) List: \$59.99

Exh. 1043, p. 4

David Shiroff Contradictions – Amazon Search

Declaration (Exhibit 1076 ¶ 61)

Even if the Quinn Declaration identified the proper market (which it clearly did not), [📄] it is a fatal error not to consider any of the 184 products that the Amazon algorithm identifies as belonging to that so-called market. It is commonly known that Amazon has the most sophisticated consumer shopping algorithm ever designed.

Transcript (Exhibit 2029, 118:14-23)

14	Q	Okay. Let's go to page three. This is the
15		bottom row. This picture on the left it says -- the
16		title says, I guess, Nestle adjustable shredded gel
17		memory foam fill. And if you look at the picture on the
18		packaging, it says extra shredded gel infused memory
19		foam fill. Do you see that, sir?
20	A	Yes, sir.
21	Q	[📄] Would you categorize this as a pillow?
22	A	Actually, no. I would categorize it as memory
23		foam pillow fill. [📄] Probably fill that's used in pillow.

Transcript (Exhibit 2029, 125:18-21)

18	Q	Okay. But you stand by the statement that
19		[📄] it's error not to consider any of the 184 products
20		considering what we just saw?
21	A	I'm standing by that.

David Shiroff Contradictions – Amazon Search

Transcript (Exhibit 2029, 119:4-7)

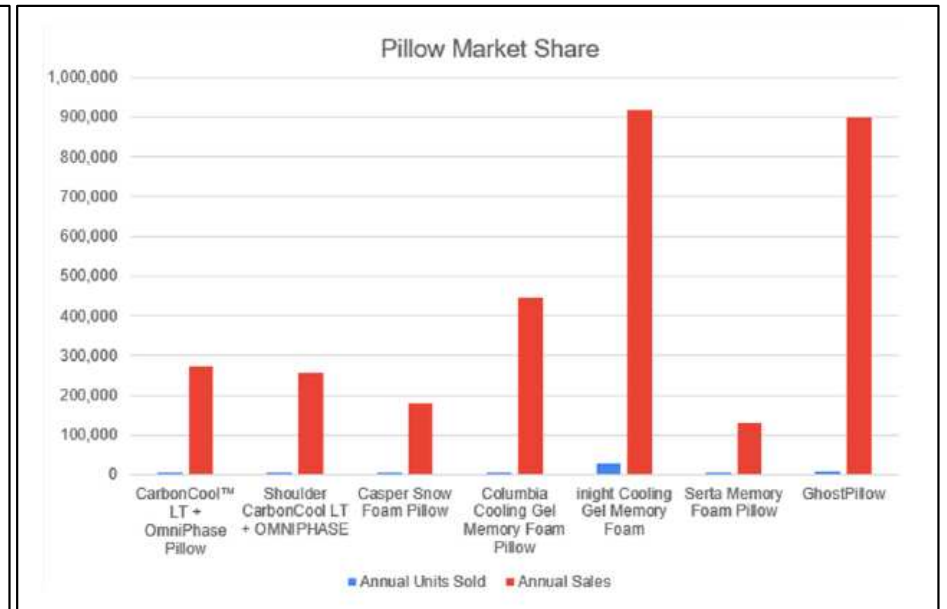
4	THE WITNESS: Yes. I would certainly concede
5	that this search produced some results that were
6	outside of what the search was trying to achieve
7	and then some that did achieve what it was trying.

Transcript (Exhibit 2029, 120:11-25)

11	Q Okay. So if we go to page four, again, this
12	middle -- first row, this middle product. Again, this
13	is memory fill, correct, not a pillow?
14	A Correct.
15	Q And if we go page -- still on page four the
16	bottom pillow in the middle, I will take you to page
17	five, the top has the description. It's a cooling bed
18	pillow two pack shredded memory foam pillow and you see
19	the picture. Is that shredded memory foam?
20	A That's what it says it is. I assume that's
21	what's inside the pillow. That's what the description
22	says.
23	Q Okay. And do you see any holes or PCM on that
24	pillow?
25	A I do not.

Market Share

- Defined Market: **Molded Gel Memory Foam PCM pillow with punched holes**



Exh 2013 ¶ 34; 2015 p. 10

Exh 2013 ¶ 34; 2015 p. 5

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Market Survey - Likert Scale

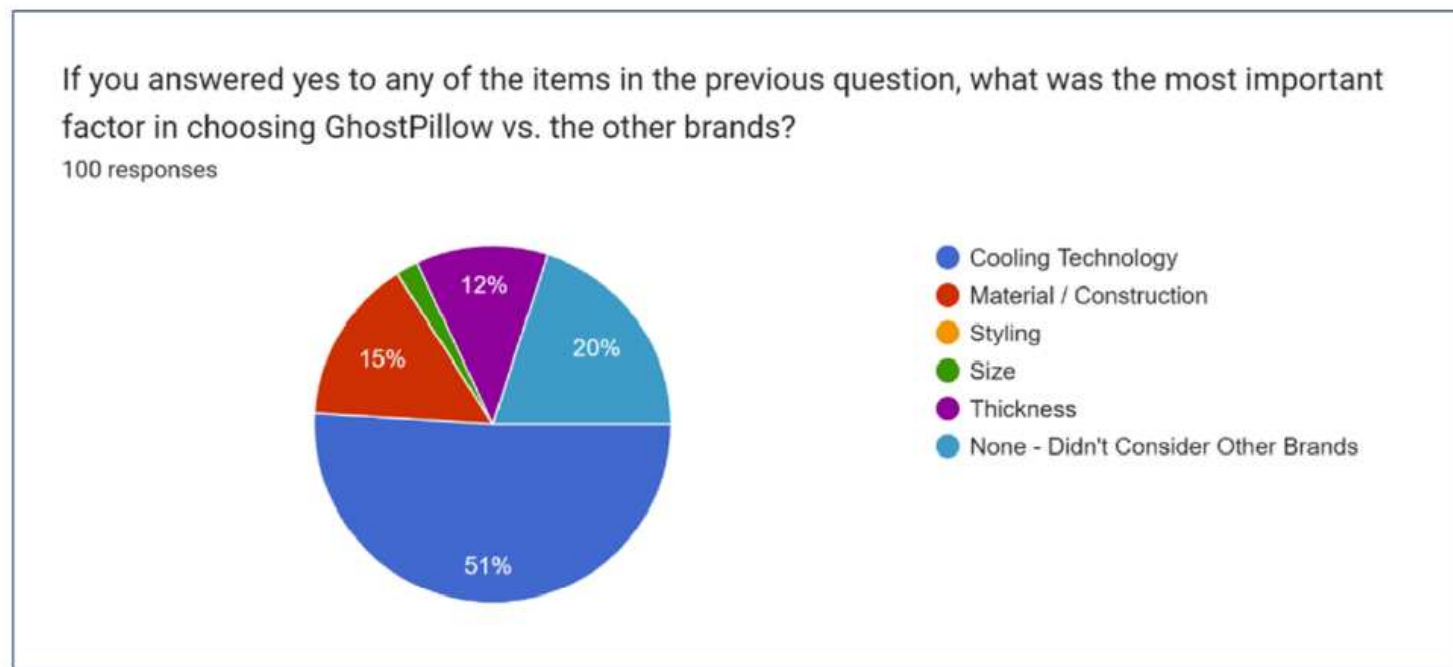
38. A  Likert Scale was used to determine how important certain features, materials, and other factors were to them making a purchasing decision.

Mr. Quinn Declaration, Exh 2013, ¶ 38

17	Q	Understood. I don't need the name. Have you
18		ever heard of Likert scale?
19	A	 The first time I heard of the Likert scale
20		that I can remember was when I was reading Mr. Quinn's
21		declaration.

Mr. Shiroff Deposition, Exh. 2029, 156:17-21)

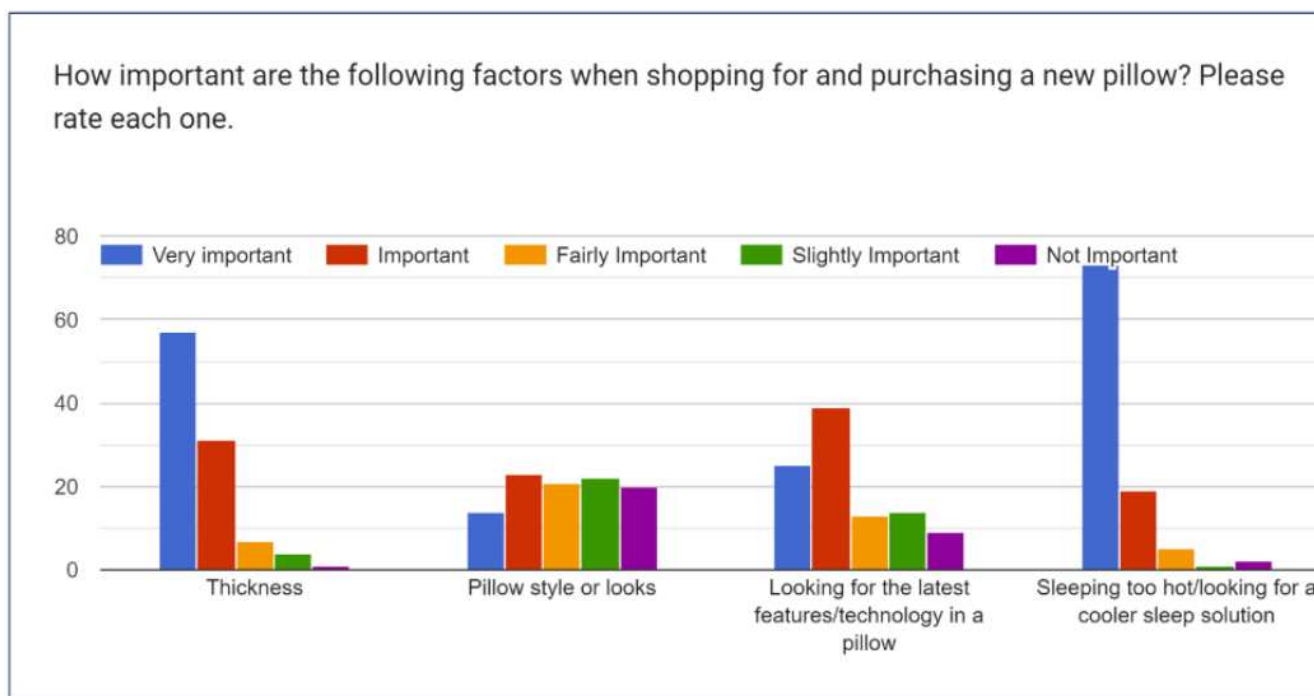
Market Survey



Exhs. 2013 ¶ 45; 2015 p. 17

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

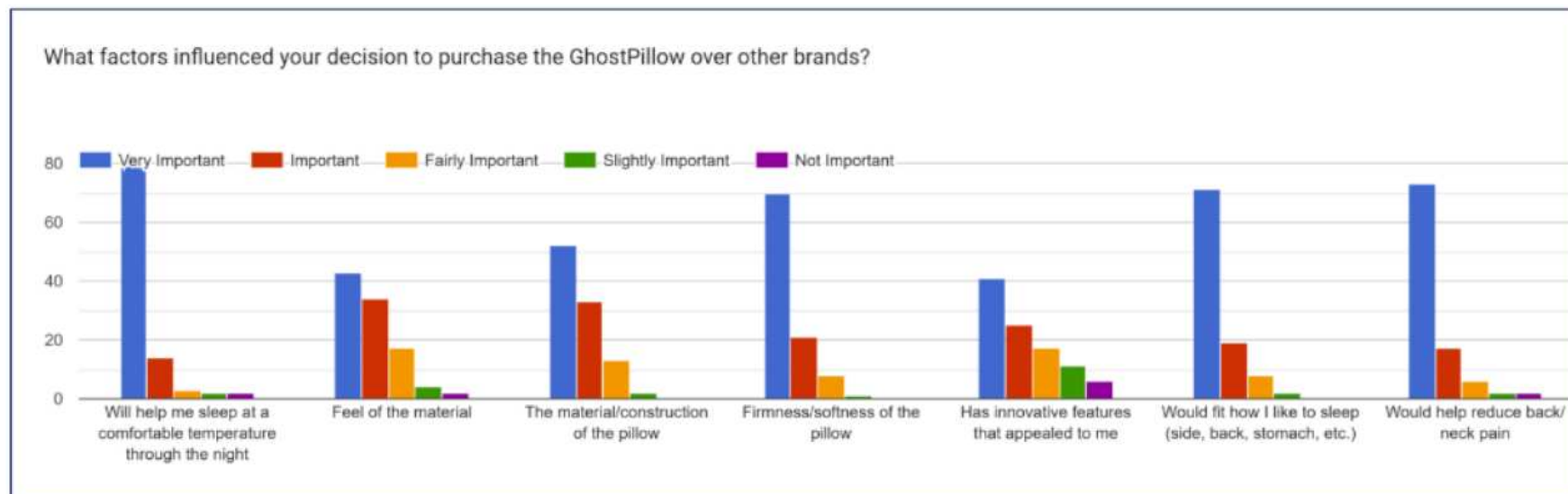
Market Survey



Exhs. 2013 ¶ 45; 2015 p. 13

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Market Survey



Exh. 2013 ¶ 45; 2015 p. 14

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Ex Parte Whirlpool Corporation

- *Ex Parte Whirlpool Corporation*, Appeal 2013-008232, Reexamination Control No. 90/009,855, Patent 6,082,130
- “[t]he length of the intervening time between the publication dates of the prior art and the claimed invention can also qualify as an objective indicator of non-obviousness” quoting *Leo Pharma., Ltd. v. Rea*, 726 F.3d 1346, 1359 (Fed. Cir. 2013) (Exh. 2012, p.18; Response p.57)

Length of Time Between Prior Art and ‘301 Patent

- Priority date of ‘301 Patent is September 28, 2017 (Sur-Reply, p. 24)
- Petitioner’s combinations of prior art center on Liestro or Ohta combined with Crawford or Schneider

Prior Art	Publication Date
Liestro	December 12, 2003
Ohta	March 8, 2007
Crawford	May 22, 2014
Schneider	June 9, 2016

Conclusion

- The '301 Patent is not obvious in view of the 4 prior art combinations
- If determined to be obvious, multiple secondary considerations rebut a finding of obviousness