

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PROVISUR TECHNOLOGIES, INC.,

Petitioner,

v.

WEBER FOOD TECHNOLOGY GMBH,

Patent Owner

Case IPR2024-00269
U.S. Patent No. 11,331,823

**PATENT OWNER'S RESPONSE
TO PETITION FOR *INTER PARTES* REVIEW**

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I. INTRODUCTION

Petitioner's obviousness grounds for the '823 Patent are vague, conclusory, and technically infeasible. Grounds 1 and 2 assert obviousness theories based on Müller, relying on GEA438 (Ground 1) or DePoi (Ground 2) for their vacuum brake teachings. But the Petition is entirely unclear as to what either proposed combination *is*. Petitioner does not identify with particularity how the references would be combined, which components remain from Müller's native system, or which components are ported from GEA438 or DePoi. At most, Petitioner vaguely suggests that the combinations would involve modifying Müller's buffer 12 with a vacuum brake. Further, even if Petitioner had explained what the combination *is*, it failed to explain *how* a combination of these references satisfies the Challenged Claims. Because Petitioner has failed to articulate with particularity its proposed combinations and how such combinations render obvious the Challenged Claims, Grounds 1 and 2 fail.

The lack of clarity in Petitioner's proposed combinations is worsened by the fact that Müller is technically incompatible with both GEA438's vacuum brake and DePoi's vacuum brake. Müller's system, by design, relies on a small buffering loop on advance of its cutting region, storing no more material than is required for a single cut. This efficient small loop is made possible by a much larger buffer upstream that serves to decouple the high-speed cutting region from the relatively slower material

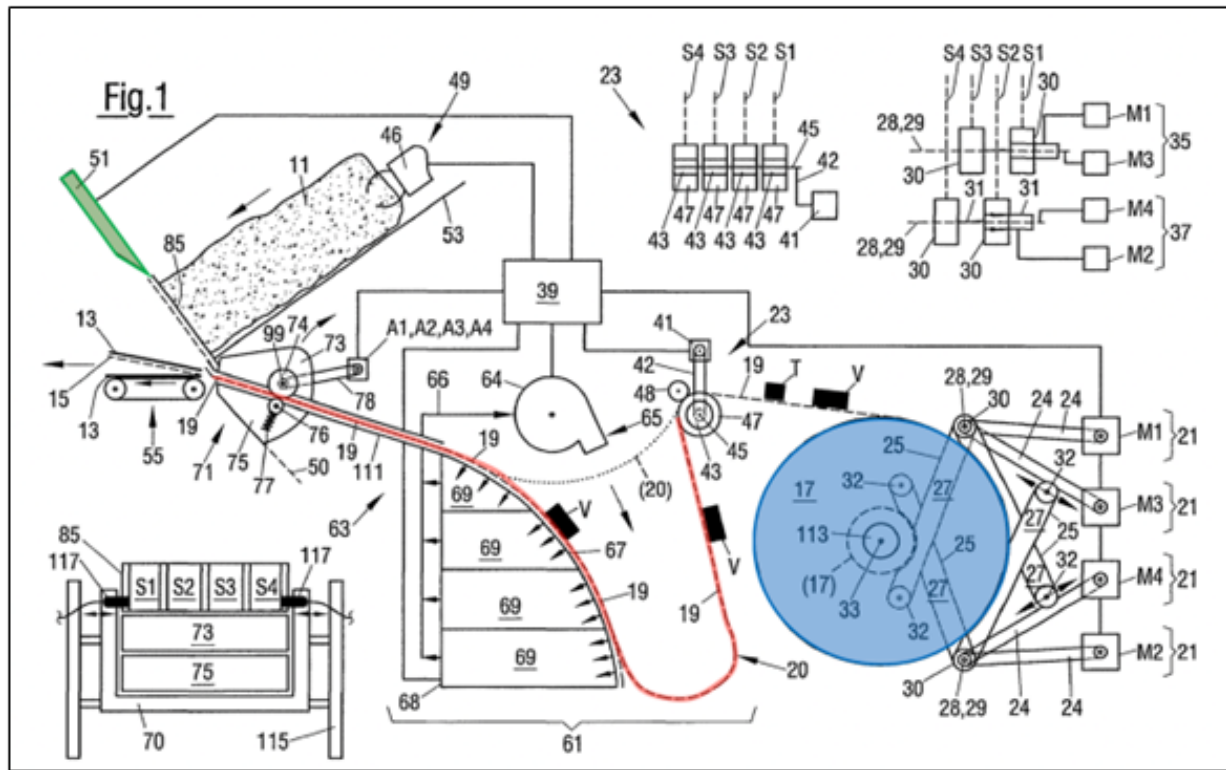
store. Petitioner's theory ignores this two-buffer approach and generally argues that the much larger, single stage systems of GEA438 or DePoi would supplant or supplement—which is not clear from the record—Müller's small buffering loop. Petitioner's approach fails for a number of technical reasons. First, the vacuum brake units taught by GEA438 or DePoi quite simply would not fit in Müller's small buffer area. Second, Müller's small buffer operates independently from and is incompatible with the pneumatics system which form the technical foundation of GEA438's and DePoi's vacuum brakes. Third, the generic "advantages of a vacuum brake" Petitioner relies on for its motivations to combine are either redundant of Müller's buffer system or simply don't benefit Müller's system due to the specific operation of Müller's system—details the Petition conveniently ignores.

In sum, not only are the proposed combinations unclear, but they are technically infeasible. Petitioner has wholly failed to carry its burden, and the Board should reject both Proposed Grounds.

II. SUMMARY OF THE '823 PATENT

The challenged independent claims of the '823 Patent describe an apparatus for provisioning web-like interleaved sheet material (e.g., paper) at a cutting region in which products (e.g., cheese or meat) are supplied on a track, cut into slices, and interleaved sheets are introduced between slices. Ex. 1001, claim 1; *see also id.*, claim 17 (reciting the same). As illustrated in annotated Fig. 1 below, the claimed

apparatus comprises several components, including: a **material store** (e.g., a roll of paper), a **cutting region**, and a **loop store** between the material store and cutting region:



Id., Fig. 1 (annotated).

The loop serves as a buffer between the high speed and dynamic needs of the cutting area and the relatively sluggish material store. *Id.*, 2:24-40 (noting the invention ensures “ejection of the material web into the cutting region is [] ***reliably decoupled*** from the process of the removal of the material web from the material store at comparatively high cutting speeds”). To maintain tension over this loose loop, the loop store includes a suction device 63 behind a contact surface 67 that

pulls a vacuum. *Id.*, 3:1-3, 12:62-13:31. In this way, the contact surface serves to brake the loop when the loop is pulled out of the loop store into the cutting region during cutting cycles. *Id.*

III. PETITIONER'S PROPOSED GROUNDS DO NOT ANTICIPATE OR RENDER OBVIOUS THE CHALLENGED CLAIMS

A. Petitioner Fails to Explain with Particularity its Proposed Combinations in Both Ground 1 and 2

“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Focusing on purported benefits without explaining how the combination would work in the first place cannot satisfy this burden. *The Walt Disney Co., et al. v. WAG Acquisition, L.L.C.*, IPR2022-01346, Paper 12 at 24-26 (PTAB Mar. 10, 2023) (denying institution where a petitioner did not “set forth sufficient details on what aspects from [secondary] would be combined with [primary] and how such aspects would work together”). In *Walt Disney Co.*, the Board faulted Petitioner for failing to state whether the secondary reference was “meant to supplant” functionality in the primary entirely or “whether the two systems are meant to coexist in some fashion.” *Id.*, 25. The Petition here shares these same faults.

Rather than providing a limitation-by-limitation analysis for its obviousness theories, Petitioner relies on omnibus motivation to combine sections separate and apart from any specific claim limitations. Pet., Sections VIII.A.6 and IX.A.6. Petitioner's expert similarly incorporates motivation to combine sections within his declaration, completely independent from any specific limitations in the Challenged Claims. Ex. 1003, Sections XI.B and XII.B. This abstraction appears to be by design. Indeed, neither Petitioner nor its expert ever describe proposed combinations of the references with particularity and provide nothing more than generic motivations that are copied and pasted across three different combinations¹ with little-to-no substantive changes. In other words, Petitioner's motivations to combine are completely agnostic to specific proposed modification of the references. In addition to providing only generic motivations, Petitioner fails to sufficiently articulate what

¹ Petitioner has presented three separate Müller-based combinations—both grounds in this proceeding and Ground 1 in IPR2024-00269, which challenges related U.S. Patent No. 10,647,013 (“the ’013 Patent”). Each of these three grounds relies on a separate secondary reference in combination with Müller, presumably for different reasons. At the very least, Müller in Ground 1 in the ’013 Patent proceeding is being modified in an attempt to capture a vacuum-based loop length measurement it does not teach, and Müller in the grounds here is being modified to teach vacuum braking functionality it does not teach. Yet the omnibus motivations to combine are nearly identical across all three grounds.

proposed combination it is relying on for its obviousness theory. Instead, Petitioner relies on vague and conclusory statements that GEA438 or DePoi would be combined with Müller. *Comcast Cable Comms., LLC v. Proptu Systems Corp.*, 838 Fed. Appx. 555, 557 (Fed. Cir. 2021) (finding that petitioner “had not proven a motivation to combine because it merely. . . recited boiler plate legal conclusions untethered to any claim language.”).

For example, Petitioner relies on a combination of Müller and GEA438 to meet elements 1.3 and 1.4 in Ground 1. Pet., 28-31. In doing so, however, Petitioner fails to articulate how the two would be combined to meet the claim elements. For element 1.3, Petitioner states is “Müller in combination with GEA438 would meet element 1.3” with no further explanation anywhere in its mapping. *Id.*, 28-30. While it is clear that neither Müller nor GEA438 satisfy element 1.3 independently, it is unclear (1) how the two would be combined and (2) how the combination would meet element 1.3.

For element 1.4, Petitioner broadly suggests the combination of Müller and GEA438 would “incorporate a vacuum brake into the contact surface on the outgoing side” *Id.* But again, Petitioner fails to explain what would be incorporated from the vacuum brake, how the contact surface would be modified, or any other any other details regarding the proposed combination or how the proposed combination meets element 1.4. Because Müller’s contact surface and buffer 12 are

technically incompatible with a vacuum system (*infra* Section III.B.1), the proposed combination, absent sufficient explanation, is particularly unclear. For example, it is unclear, especially given the contrast in Müller's movable, planar strip guide with GEA438's suction plate 6, how GEA438's "vacuum brake technique" would be combined with Müller's apparatus to meet element 1.4.

Identical issues arise pertaining to Petitioner's proposed combinations of Müller and DePoi to meet elements 1.3 and 1.4 in Ground 2. *Id.*, 48-53. However, here, Petitioner doesn't even go so far as to suggest that DePoi's vacuum brake would be "incorporated into the contact surface" so there is zero explanation or suggestion regarding the proposed combination of Müller and DePoi. *See id.* Thus, it is once again unclear (1) how the two would be combined and (2) how the combination would meet elements 1.3 or 1.4.

Petitioner's reliance on its omnibus motivation to combine sections from both the petition and expert declaration fail to remedy the holes in its obviousness theories. These sections do not provide any further specificity regarding Petitioner's proposed combinations. Instead, the motivations to combine relied upon by Petitioner are just as generic as their obviousness theories, perpetuating the lack of clarity as to what the combinations are. Broad statements about combining Müller with GEA438 or DePoi fail to clarify *how* the two references would be combined in such a way to satisfy the challenged claims. *Shopkick, Inc. v. Novitaz, Inc.*, IPR2015-

00279, Paper 7 at 30 (PTAB May 29, 2015) (“[C]onclusory labels do not substitute for a fact-based analysis ... establishing *what is being modified and why*, based on the differences between the prior art and the claimed invention, it would have been obvious to a person of ordinary skill to make the modification.”) (emphasis added); *Comcast Cable Comms*, 838 Fed. Appx. at 557 (finding insufficient motivation to combine where the petition lacked “explanation as to *how or why* the reference would be combined to produce the claimed invention.”) (emphasis added). This should be especially true where Petitioner’s motivation to combine sections are nearly identical across three separate combinations. *Compare* ’013 Ex. 1003, ¶¶201-232 *with* ’823 Ex. 1003, ¶¶179-210 *with id.* ¶¶325-354. The generic application of Petitioner’s expert’s motivation to combine sections further support the lack of specificity of Petitioner’s proposed combinations.

Petitioner’s vague combinations are further emphasized by Petitioner’s expert’s repeated admissions on cross examination that the proposed combinations *are not specific*. Indeed, Mr. Jobin suggested it did not matter what specific components from GEA438 or DePoi would be included in the proposed combination:

Q: When you state that “adding a vacuum chamber and contact surface to Müller’s strip guide would allow the system to use those

same components for other benefits,” does that include the entirety of vacuum box 26 from DePoi?

...

A: I have not proposed a specific combined embodiment, nor am I required to do so under the obviousness analysis

Ex. 2009 (Jobin Dep. Tr.), 107:22-108:6; *see also id.*, 87:23-88:3 (Mr. Jobin stating, “I don’t know that I’ve gone to that level of detail in evaluating this combination” when asked what components of Müller would be retained in the proposed Müller-GEA438 combination).

When reviewing Petitioner’s obviousness theories within the context of both the petition and Mr. Jobin’s testimony, a critical question remains: How is Müller’s buffer 12 being modified? Without answering this basic question, Petitioner leaves Patent Owner and the Board guessing as to what its combinations are. Further, even if Petitioner had sufficiently articulated what its proposed combinations are, it failed to explain how such combinations meet particular claim elements. *See, e.g.*, Pet., 28-31, 48-53 (covering elements 1.3 and 1.4 of the ’013 Patent). As a result, Petitioner’s obviousness theories combining (1) Müller and GEA438, and (2) Müller and DePoi, ultimately fail because they are devoid of any particularity that would explain what the proposed combination is and how the proposed combination would meet the challenged claims. *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (holding obviousness determination to be improper where the record

lacked a “clear, evidence-supported account” of “how the combination” would work).

B. Ground 1: Petitioner's Proposed Combination of Müller and GEA438 Fails for Several Reasons

1. Müller is Technically Incompatible with GEA438's Vacuum System Teachings

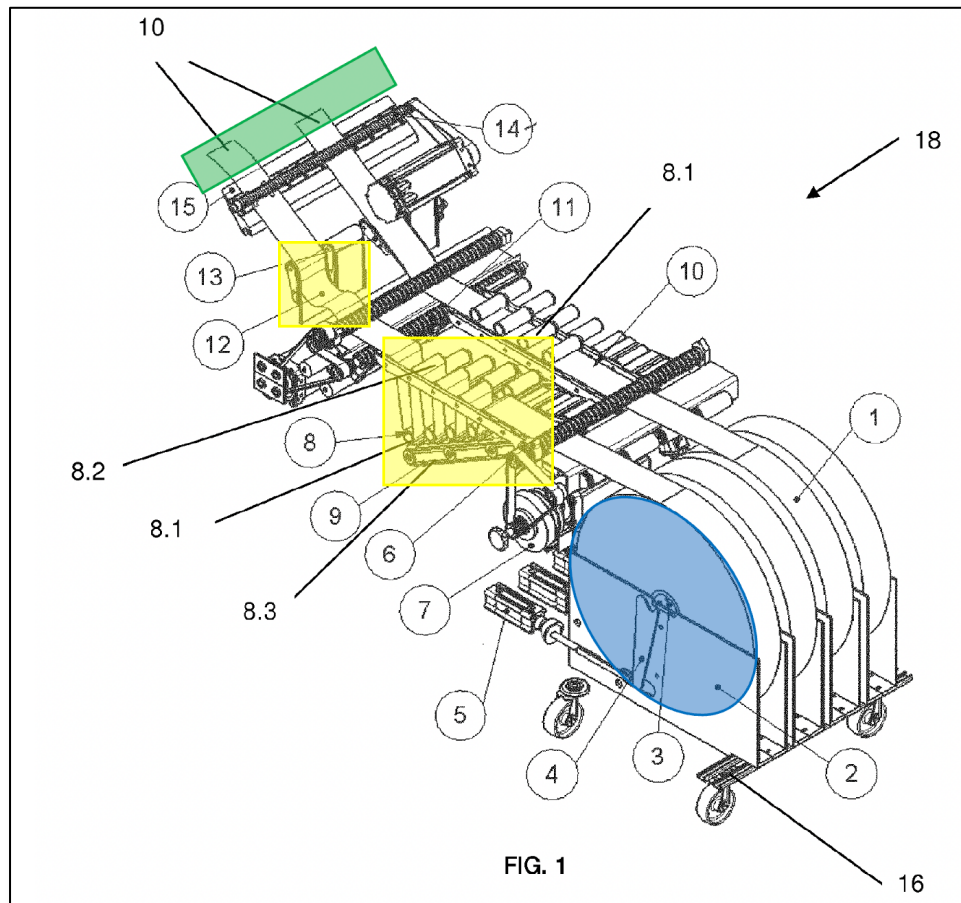
Petitioner's Ground 1 relies generally on combining Müller's and GEA438's teachings. Although Petitioner does not articulate its combination with sufficient particularity, Petitioner at least articulates that its proposed combination involves some modification of Müller's buffer 12 with GEA438's teachings related to its vacuum brake. In doing so, Petitioner fails to account for the contrast in Müller's buffer 12 as an intentionally small loop with GEA438's vacuum chamber system that lacks any loop at all. This oversight plagues Petitioner's obviousness theory because the small loop of buffer 12 is fundamentally incompatible with GEA438's multi-faceted vacuum system.

a) Müller's Buffering System Cannot Support GEA438's Vacuum System

Müller describes an unreeling system for interleaver material that is ultimately inserted between slices of food. Müller, [0002]. Müller's unreeling device is able to unreel a “plurality of interleaver reels[]” so that multiple lanes of material can be provided to the cutting region at the same time. *Id.*, [0007]. As the material moves through the unreeling system, it passes through two separate buffers, buffer 8 and

buffer 12, each with different storage capacities. *Id.*, [0026]. By passing through buffers 8 and 12, damage to the interleaver material, such as tearing, is prevented. *Id.* A POSITA would have understood that the different storage capacities of these buffers allow each buffer to provide a distinct type of control to the interleaver system. Ex. 2007, (Kurfess Declaration) (“*Dec.*”), ¶¶31-37.

Annotated Fig. 1 below shows in yellow Müller’s two buffers—large buffer 8 and the smaller tight loop buffer 12 arranged between the paper roll and cutting region:



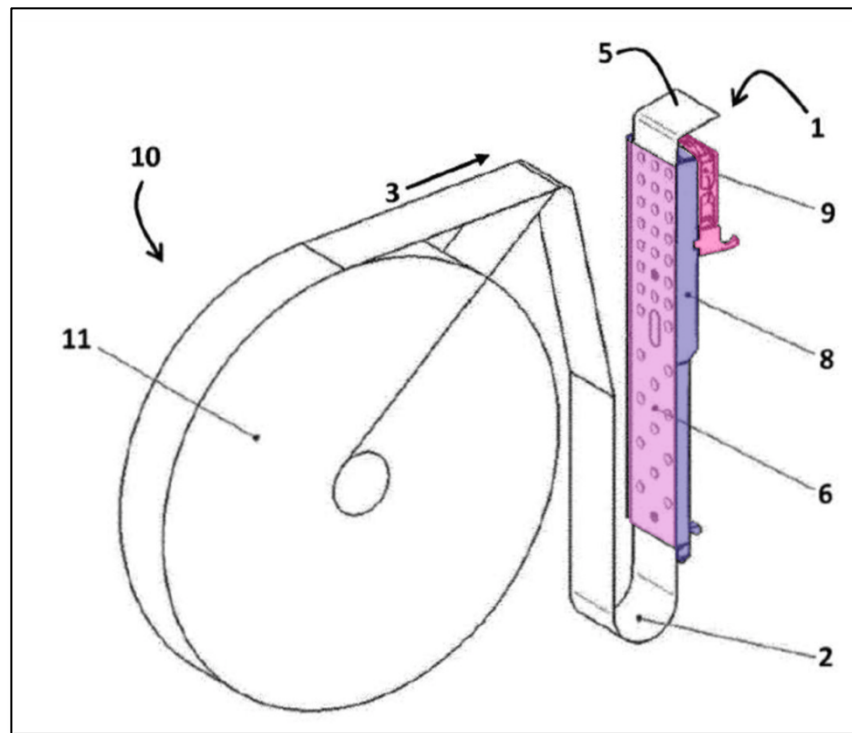
Müller, Fig. 1 (annotated).

Müller's buffer 8 is the first buffer the interleaver material enters "after the interleaver strip has been unreeled from the reel." *Id.*, [0048]. The components of buffer 8 operate to "compensate[] for a difference between unreeling speed and the consumption of the interleaver strip[.]" *Id.*, [0035]. A POSITA would understand that Müller's buffer 8 is the main decoupling mechanism for Müller's system because it compensates for the difference in input speed from the output speed in order to prevent damage to the web by the storing material downstream from the input and upstream from the output. *Dec.*, ¶¶33-34.

After the material exits buffer 8, it enters Müller's buffer 12 where a small loop is formed. Müller, [0048], Fig. 1. The length of the material loop formed in buffer 12 is monitored by a "contacting sensor" to ensure that "only as much interleaver as is needed for the ejection of an interleaver" is maintained. *Id.* Buffer 12 includes interleaver strip guide 13 which supports the loop and is pivotable between a "buffering position" and a "non-buffering position." *Id.* A POSITA would have understood that the lower capacity of buffer 12 indicates that this portion of Müller's interleaver system achieves more fine-tuned control to provide the interleaver material to the cutting region at the accurate frequency. *Dec.*, ¶¶35-37.

Petitioner generally argues that a POSITA would have been motivated to implement GEA438's vacuum brake teachings in Müller's apparatus at strip guide

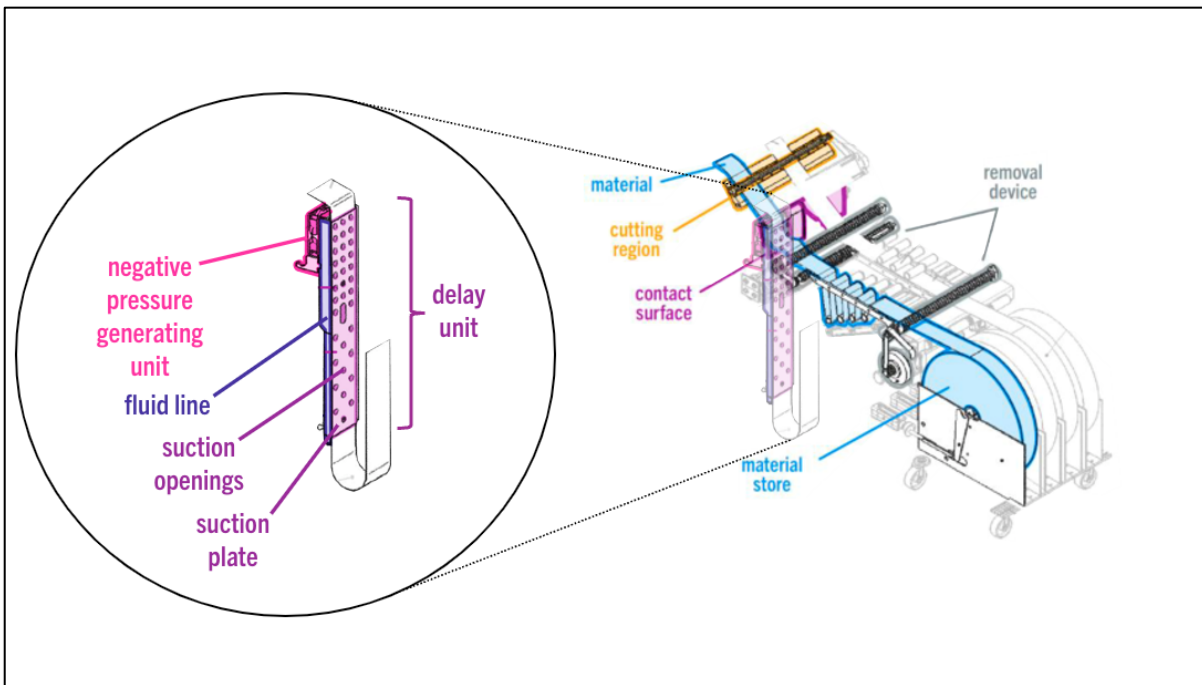
13 of buffer 12. Ex. 1003, ¶190; *see also* Pet., 34. GEA438's vacuum brake includes numerous components that are required for the system to operate including a suction plate 6, fluid line 8, a negative pressure generating unit 9. GEA438, [0031]. These components are depicted in GEA438's Figure 3 below:



Id., Fig. 3 (annotated). Petitioner's expert, Mr. Jobin, testified that the parts of GEA438's vacuum chamber include "the suction plate and the holes and the vacuum-generating unit and the vacuum chamber itself." Ex. 2009, (Jobin Dep. Tr.), 85:9-12. In addition to these components, an air-permeable surface would be required for the pressure sensor to function. Indeed, there must be air flow through

the surface over which the material travels in order to detect a pressure that indicates loop length. *Dec.*, ¶69.

A POSITA would understand that these required components associated with GEA438's vacuum brake would not fit at Müller's buffer 12. *Id.*, ¶¶69-72. As seen in the image below, the potential modifications to Müller to incorporate GEA438's vacuum brake teachings introduce significant complexity of buffer 12 in such a way that does not comport with Müller's apparatus. Thus, a POSITA would not have been motivated to combine GEA438's vacuum brake teachings at least because it would be technically infeasible with the size and capacity of Müller's buffer 12. *Id.*



Müller, Fig. 1 (annotated); GEA438, Fig. 1 (same).

As illustrated, GEA438's vacuum system imposes substantially more complexity to Müller's system and would occupy far more real estate. Further, the nature of GEA438's vacuum-based system requires a much longer loop than that used at Müller's buffer 12. As shown in the figure above, GEA438's vacuum-based system assumes a length of material travels over a significant distance with a series of apertures that provide air flow delay unit 1. A POSITA would understand the length of the suction plate is required to provide the braking force disclosed in GEA438. *Dec.*, ¶¶70-71.

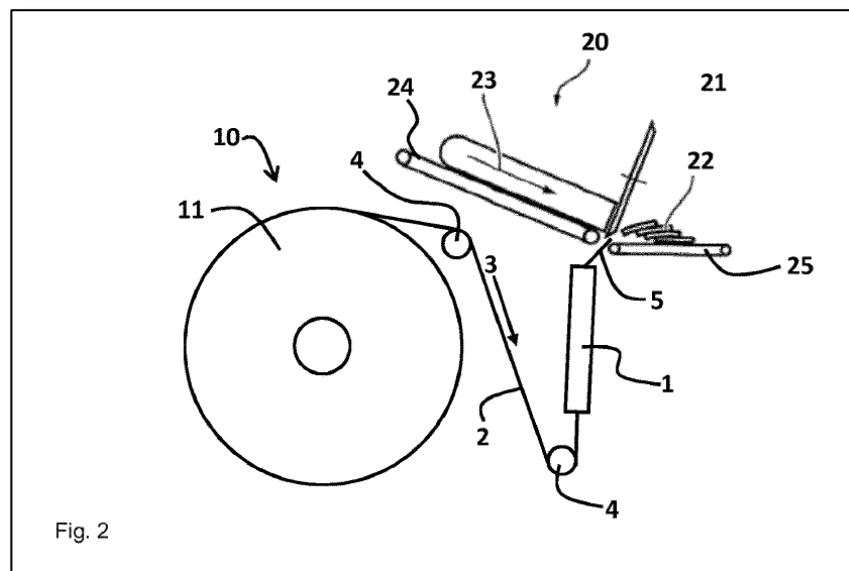
Further, not only is GEA438 technically incompatible, but its addition would increase Müller system's cost as well as increasing the cost of maintaining and installing the system. For example, a POSITA would not expect to have a readily available vacuum source in clean environments such as those Müller's system targets. *Dec.*, ¶72. Accordingly, in addition to the complexity illustrated above via the addition of GEA438's vacuum-based system to Müller's apparatus, a POSITA would have understood that a system for generating the actual vacuum is also required. *Id.* Given the cost, complexity, and incompatibility, a POSITA would not have been motivated to add GEA438's vacuum system to Müller's system.

2. GEA438 is Redundant of Müller and Petitioner's Proposed Combination Offers No Benefit to Müller

Beyond the fact that Müller's buffer 12 is technically incompatible with GEA438's teachings, a POSITA would not be motivated to combine GEA438's teachings with Müller because the alleged benefits are either (1) present in Müller's system alone, or (2) simply inapplicable to Müller's system altogether. As discussed previously, a POSITA would understand Müller teaches buffer 8 for coarse loop control and buffer 12 to be a *small* loop used for fine loop control. In contrast, a POSITA would understand that GEA438 does not disclose any type of loop-based decoupling for control of the interleaver material. *Id.*, ¶¶73-77.

A POSITA would distinguish the buffering system disclosed in Müller from a non-dynamic system without any buffer like GEA438. *Id.*, ¶¶73-77. In contrast to Müller, a non-dynamic system absent any loop-based buffer does not achieve decoupling between inlet and outlet speeds via the loop itself nor by adjusting the length of said loop. A POSITA would understand that based on GEA438's functionality and structure, it does not disclose dynamic loop control. GEA438's pneumatic-based apparatus is designed so "only that much separating material 2 is unrolled from the tape roll 11 as is required by the cutting machine 20 for disposal between the foodstuff slices 22." GEA438, [0031]. GEA438 states, "the tape roll 11 is at all times tensioned" to ensure that no kinks, tears, or backup are formed.

GEA438, [0031]. This also ensures that the tape does not jump from the tape roll or the deflection rollers 4. *Id.* This is demonstrated in GEA438's Fig. 2 as the material is tensioned to the deflection roller 4 and then introduced to the delay unit 1. A POSITA would understand this deflection roller does not allow the material to change and lengthen dynamically. *Dec.*, ¶¶74-76.



GEA438, Fig. 2.

While GEA438's Fig. 1 does not demonstrate the presence of the deflection roller 4, a POSITA would understand GEA438's system would still not teach dynamic loop control. *Dec.*, ¶¶74-76. Because the delay unit tensions the material to specifically avoid "backing up" (i.e., "forming a loop"), the material would not be dynamically controlled even without the presence of the deflection rollers 4. *Id.*

Furthermore, as the material tape of GEA438's system is not dynamically changing, a POSITA would understand that GEA438 does not decouple the material store and the interleaver material with dynamic loop control. *Id.*, ¶¶74-76. In fact, GEA438 does not describe any sensing the length of the material nor adjusting the length of the material. Rather, GEA438's system is controlled by a control unit that is "configured in such a manner that the rotating speed of the fan is controlled as a function of an unrolling and/or transporting speed of the separating material." GEA438, [0012]. Thus GEA438's control system is independent of any characteristics of the material between the material roll and the delay unit 1.

Müller, on the other hand, achieves decoupling with coarse and fine control with buffers 8 and 12, respectively. Thus, the result of combining the teachings of GEA438 with Müller's buffer 12 would be an added unnecessary and complicating step in Müller's overall system with no advantages. The purported benefits Petitioner relies on for its motivation to combine are either already present in Müller alone or are merely solving problems that exist solely because of the proposed combination with a vacuum brake. A POSITA would therefore not have been motivated to incorporate teachings of GEA438's vacuum brake with Müller's buffer 12. *Id.*, ¶¶73-77.

a) Müller Alone Teaches Ensuring Appropriate Loop Length and No Motivation Exists to Modify it with GEA438

Petitioner argues through its expert that a POSITA would be motivated to combine GEA438's techniques with Müller "to ensure that an appropriate length of loop is stored in Müller's buffer." Ex. 1003, ¶185. However, Müller alone teaches ensuring an appropriate length of the loop in buffer 12. *Dec.*, ¶78. As Petitioner's own expert explains, "[a] POSA would understand that Müller's 'control system' accepts an input signal from the sensor and sends control signals to the drives (i.e. drive 11) to determine the length of paper in the loop *in order to maintain the loop at this size.*" Ex. 1003, ¶176 (emphasis added). Further, GEA438 does not describe sensing the length of the material or adjusting the length of the material. Rather, GEA438's system operates such that the "rotating speed of the fan is controlled as a function of an unrolling and/or transporting speed of the separating material." GEA438, [0012]. A POSITA would understand that there is no loop length determination involved in GEA438's control unit. *See supra* Section III.B.1; *Dec.* ¶¶67-72. Thus, it is unclear why a POSITA would have been motivated to incorporate GEA438's teachings for the benefit of a functionality—determining and ensuring appropriate loop length—that was already present in Müller, and not present in GEA438 whatsoever. It's a straightforward design/engineering proposition that systems aren't changed when such changes have no functional or

hardware benefits. Accordingly, absent any explanation or identification of benefits that compel modification, a POSITA would not be motivated to modify Müller with GEA438's teachings. In dealing with a similar circumstance in *South-Tek Systems*, the Federal Circuit noted that the redundant function of a secondary reference already disclosed in a primary reference would not motivate a POSITA to add said redundant function to the combination. *South-Tek Sys., LLC v. Engineered Corrosion Sols., LLC*, 748 F. App'x 1003, 1006-1007 (Fed. Cir. 2018) ("Given the redundant functions of Viking's drum drip and Wood's condensate drain, the Board found a person of ordinary skill would not have been motivated to add a condensate drain to Viking in addition to the system's drum drip drain."). A POSITA would not be motivated to supplant Müller's existing functionality for GEA438, especially where there is no support that GEA438's functionality would improve Müller's. *Dec.*, ¶¶73-77.

b) Müller Would Not Benefit From "Additional Advantages of a Vacuum Brake"

The remainder of Petitioner's motivation to combine relies on a POSITA's general awareness "of advantages to adding a of vacuum brake to Müller." Of these features, Petitioner highlights (1) improved threading; (2) tension control; and (3) loop stabilization. Pet., 40-41; Ex. 1003, ¶¶215-228. When looking at Müller as a whole, these touted benefits do not support a motivation to combine because such

benefits are either already realized by Müller (and would not be further improved by GEA438's teachings), or are wholly inapplicable to Müller.

(1) Adding a Vacuum System Would Not Improve Threading in Müller

Both Petitioner and its expert admit that Müller already teaches reduced threading as a result of Müller's design. Ex. 1003, ¶216 ("Müller teaches a number of improvements to "threading" the new interleaver strip into the apparatus."). Indeed, Müller specifically highlights the improvement to threading it adds as a result of strip guide 13 being movable. Müller, [0031]; *Dec.*, ¶¶54-55. Petitioner fails to articulate how and why adding a vacuum chamber to Müller's buffer 12 would improve threading any more than movable strip guide 13 already does. While Petitioner argues that the incorporation of a vacuum chamber would "eliminate the need for hand threading," such assertion is unsupported. Ex. 1003, ¶217. Indeed, a POSITA would understand that hand threading would still be required at certain portions of the interleaver apparatus even with a vacuum chamber. *Dec.*, ¶¶54-55.

Further, because adding a vacuum system to strip guide 13 in Müller would likely hinder the movement of strip guide 13, such combination may ultimately eliminate the benefit from Müller altogether rather than improve it. Lastly, given the small size of buffer 12, utilizing a vacuum brake to hold the material in place as Petitioner suggests would not add the same benefit it otherwise would in a system

like GEA438's. *Id.*, ¶¶54-55. Thus, a POSITA would understand that adding GEA438's vacuum chamber teachings would not improve Müller's threading process.

(2) Müller's Apparatus Teaches Sufficient Tension

The value of utilizing a vacuum system for tension control does not exist within the context of a system like Müller's in which buffer 12 retains a small size with less interleaver material. For example, Mr. Jobin explains the need for loop control arises in a system in which there is "too much slackness" in a loose loop web handling system. Ex. 1003, ¶220. Mr. Jobin describes a situation in which the loose loop, if under too low of tension, will "tend to flop and flutter." *Id.* Müller's small loop, on the other hand, is not subject to these same issues. Further, contrary to Petitioner's arguments, a POSITA would understand that Müller teaches sufficient tension control. *Dec.*, ¶¶56-58.

Müller ensures that the interleaver material is buffered "only as much interleaver material as is needed for the ejection of an interleaver." Müller, [0048]. As previously discussed, a POSITA would understand Müller's buffer 12 to be a *small* loop. *See supra* Section III.B.1; *Dec.*, ¶¶31-41. Because the loop in buffer 12 is small, it is not prone to the same amount of disturbance that a larger loop would experience. A POSITA would understand that a smaller loop covering a shorter

distance and containing less interleaver material, would inherently be subject to greater tension than a larger loop covering a longer distance and containing more interleaver material. *Dec.*, ¶¶56-58. Thus, a small loop, like Müller's, is not subject to the same "fluttering" or "flopping" described by Mr. Jobin when articulating the benefit of a vacuum system in tension control.

Petitioner further argues that a vacuum chamber would provide the benefit of braking the interleaver material to avoid an uncontrolled web that may travel out of a traditional loop store as the result of inertia caused by rapid deceleration at the cutting region. Ex. 1003, ¶¶221-22. Müller, however, is designed to prevent the very issue the vacuum brake is supposed to improve. Müller explains its interleaver reel is "braked automatically as soon as there is no need for the interleaver strip, for example when a product change is taking place in the cutting device." Müller, [0010]. Indeed, Müller specifically avoids the need for a brake on the ascending side of the loop. *Dec.*, ¶¶56-58. Thus, the issues of overrun inherent in a loop system that would otherwise be solved with a vacuum brake in the loop are specifically avoided in Müller. Müller is specifically designed to employ braking upstream of the loop in buffer 8 so that the loop in buffer 12 does not need to be braked. Implementing a vacuum chamber in buffer 12 to brake the interleaver material would create redundancy that ultimately negates the design and purpose of Müller's entire

interleaver system. Not only are the benefits of braking not realized, but they are in contradiction to Müller's teachings.

(3) *Müller's Loop Would Not Be Made More Stable With a Vacuum System*

For the same reasons discussed in Section IV.A.3.b(1), Müller's buffer 12 would not realize the alleged improvements in stability of the web exiting the loop store due to its size and the design of Müller's system. The small structure of Müller's buffer 12 ensures "only as much interleaver as is needed for the ejection of an interleaver" is contained in the loop of buffer 12. Müller, [0048]. A POSITA would understand that in doing so, Müller would sufficiently protect against potential vibrations or twists resulting from the acceleration at the cutting edge. *Dec.*, ¶59. As such, the benefits of loop stabilization would similarly not be realized in Müller.

C. Ground 2: Petitioner's Proposed Combination of Müller and DePoi Fails for Several Reasons

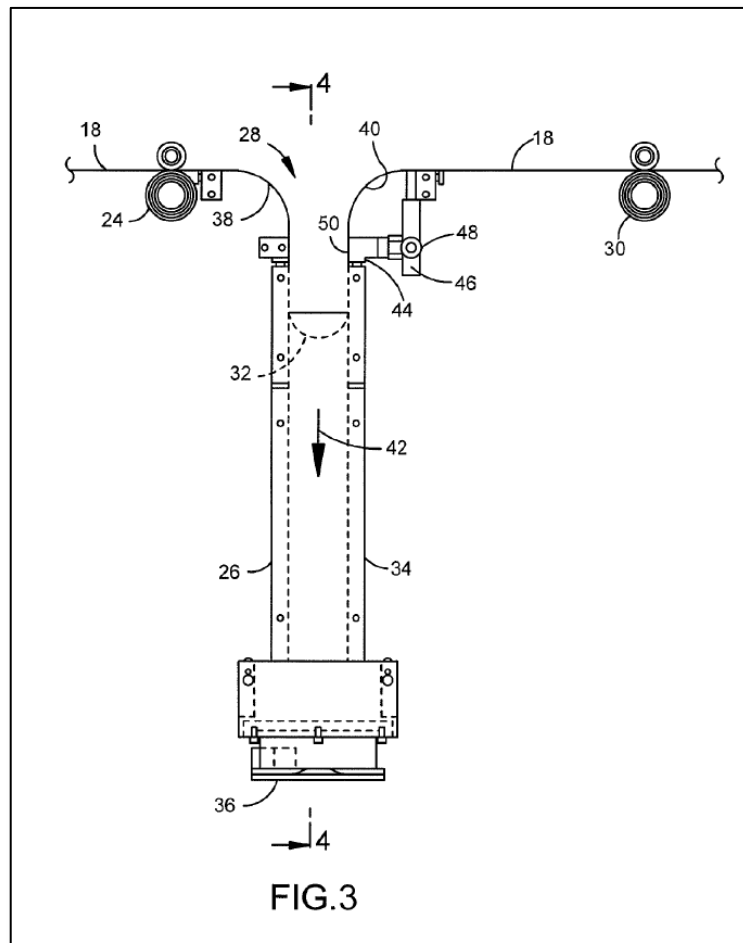
1. *Müller is Technically Incompatible with DePoi's Vacuum System Teachings*

Petitioner's Ground 2 relies generally on combining Müller's and DePoi's teachings. Although Petitioner does not articulate its combination with sufficient particularity, Petitioner at least articulates that its proposed combination involves some modification of Müller's buffer 12 with DePoi's teachings related to its vacuum brake. In doing so, Petitioner fails to account for the contrast in Müller's

buffer 12 as an intentionally small loop with DePoi's complicated dual vacuum chamber system. This oversight plagues Petitioner's obviousness theory because the small loop of buffer 12 is fundamentally incompatible with DePoi's multi-faceted, double vacuum chamber system.

a) Müller's Buffering System Cannot Support DePoi's Vacuum System

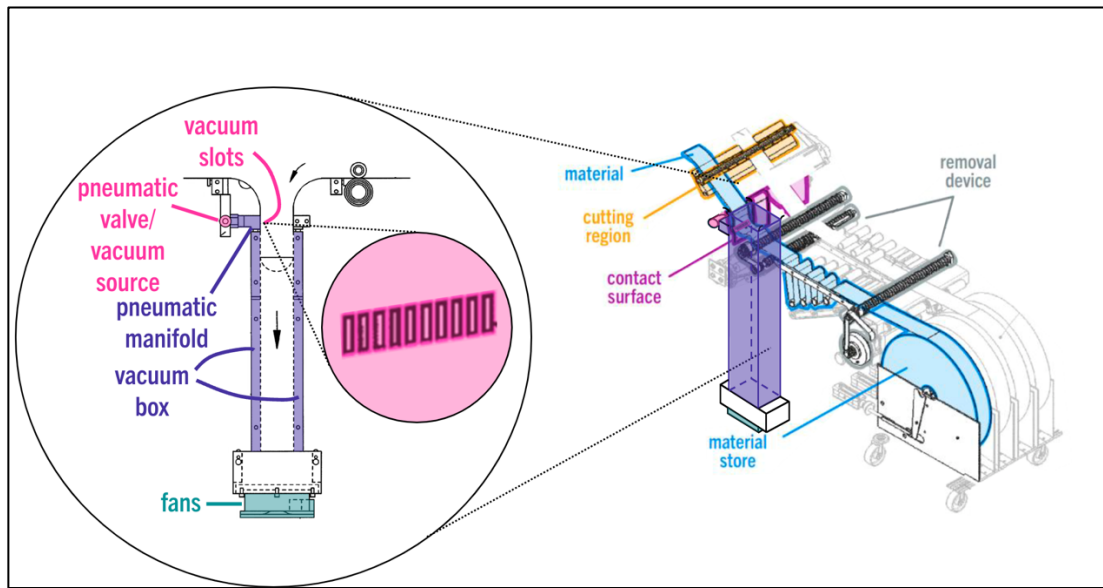
Petitioner generally argues that a POSITA would have been motivated to implement DePoi's vacuum brake teachings in Müller's apparatus at strip guide 13 of buffer 12. Ex. 1003, ¶335; *See also* Pet., 56. DePoi's vacuum brake includes numerous components that are required for the system to operate including vacuum box 26 with frame 34 and fans 36 in the base. DePoi, [0027]. The second vacuum system, brake 28, would additionally be required which comprises pneumatic manifold 44, a pneumatic valve 46, a vacuum source 48, and vacuum slots 50. *Id.*, [0029]. These components are depicted in DePoi's Fig. 3 below:



Id., Fig. 3. In addition to these components, an air-permeable surface would be required for the pressure sensor to function. Indeed, there must be air flow through the surface over which the material travels in order to detect a pressure that indicates loop length. *Dec.*, ¶83.

A POSITA would understand that these required components associated with DePoi's vacuum brake would not fit at Müller's buffer 12. *Id.*, ¶¶83-86. As seen in the image below, the potential modifications to Müller to incorporate DePoi's vacuum brake teachings introduce significant complexity of buffer 12 in such a way

that does not comport with Müller's apparatus. Thus, a POSITA would not have been motivated to combine DePoi's vacuum brake teachings at least because it would be technically infeasible with the size and capacity of Müller's buffer 12.



Müller, Fig. 1 (annotated); DePoi, Fig. 1 (same).

As illustrated, DePoi's vacuum system imposes substantially more complexity to Müller's system and would occupy far more real estate. Further, the nature of DePoi's vacuum-based system requires a much longer loop than that used at Müller's buffer 12. Indeed, DePoi's vacuum-based system assumes a length of material travels to the bottom of the vacuum box due to the fans 36 at the bottom of the vacuum box, and then has to travel an increased ascending length to reach brake 28 and exit the vacuum box.

Further, not only is DePoi technically incompatible, but its addition would increase Müller system's cost as well as increasing the cost of maintaining and installing the system. For example, a POSITA would not expect to have a readily available vacuum source in clean environments such as those Müller's system targets. *Dec.*, ¶¶83-86. Accordingly, in addition to the complexity illustrated above via the addition of DePoi's vacuum-based system to Müller's apparatus, a POSITA would have understood that a system for generating the actual vacuum is also required. *Id.* Given the cost, complexity, and incompatibility, a POSITA would not have been motivated to add DePoi's vacuum system to Müller's system.

2. DePoi is Redundant of Müller and Petitioner's Proposed Combination Offers No Benefit to Müller

Beyond the fact that Müller's buffer 12 is technically incompatible with DePoi's teachings, a POSITA would not be motivated to combine DePoi's teachings with Müller because the alleged benefits are either (1) present in Müller's system alone, or (2) simply inapplicable to Müller's system altogether. As discussed previously, a POSITA would understand Müller teaches buffer 8 for coarse loop control and buffer 12 to be a *small* loop used for fine loop control. *Id.*, ¶¶31-41. In contrast, a POSITA would understand that DePoi engages buffering through an dual vacuum system that encloses the entirety of DePoi's loop. *Id.*, ¶¶87-89.

A POSITA would understand that the components and operation of DePoi's pneumatic-based apparatus allow material to be fed through a double vacuum apparatus and account for the inertia load on the web that occurs to "rapid start/stop motion." *Id.*, ¶¶87-89; DePoi, [0002]. The web material is fed into the vacuum box 26 by first drive 24 which "moves with relatively constant velocity" during steady state operation. *Id.*, [0026]. The web moves into the vacuum box 26 as it passes over the entrance support surface or deck 38. *Id.*, [0027]. At the bottom of the vacuum box, "fans 36 create a low-pressure zone under the loop 32 which provides web tension of the web between the two drives 24, 30." *Id.* A POSITA would understand that this first vacuum system created by the fans at the bottom of the vacuum box affects the formation of the loop 32. *Dec.*, ¶¶87-89.

Drive 30 is downstream of the first drive 24 and "starts and stops every cycle, advancing that portion of the web 18 equal to the document/sheet length size to be cut." DePoi, [0026]. However, drive 30 rapidly decelerates the transport speed of web 18. This rapid deceleration results in a high inertia load on the web that is "significantly larger than the tension force provided by a vacuum box 26." *Id.*, [0028]. To accommodate this high inertia load and difference in web transport speed, brake 28 "has been added to provide a fast-responding supplement to the vacuum force 42 during rapid deceleration to maintain sufficient web tension on the web 18 between the brake 28 and the second drive 30." *Id.* Brake 28 comprises a pneumatic

manifold 44, a pneumatic valve 46, and a vacuum source 48. *Id.*, [0029]. There are also vacuum slots 50, forming a vacuum inlet, that are in the middle of the “downstream side of the frame 34 of the vacuum box 26 in close proximity to the curved deck section 40.” *Id.* As the web decelerates, the pneumatic valve 46 opens, and a vacuum airflow through the vacuum slots 50 is generated. *Id.*, [0030]. This airflow creates “a retarding friction force on the web.” *Id.* Thus, a POSITA would have understood that brake 28 accommodates for the difference of speeds in the machine by slowing the material down as it exits the vacuum box to a peak inertia load on the web.

Müller, on the other hand, achieves decoupling with coarse and fine control with buffers 8 and 12, respectively. *See supra* at Section III.B.1. Thus, the result of combining the teachings of DePoi with Müller’s buffer 12 would be an added unnecessary and complicating step in Müller’s overall system with no advantages. The purported benefits Petitioner relies on for its motivation to combine are either already present in Müller alone or are merely solving problems that exist solely because of the proposed combination with a vacuum brake. A POSITA would therefore not have been motivated to incorporate teachings of DePoi’s vacuum brake with Müller’s buffer 12. *Dec.*, ¶¶87-90.

a) Müller Alone Teaches Ensuring Appropriate Loop Length and No Motivation Exists to Modify it with DePoi

Petitioner argues through its expert that a POSITA would be motivated to combine DePoi techniques with Müller “to ensure that an appropriate length of loop is stored in Müller’s buffer.” Ex. 1003, ¶331. However, as discussed above Müller alone teaches ensuring an appropriate length of the loop in buffer 12. *Supra* at Section III.B.2(a). Thus, it is unclear why a POSITA would have been motivated to incorporate DePoi’s teachings for the benefit of a functionality—ensuring appropriate loop length—that was already present in Müller. It’s a straightforward design/engineering proposition that systems aren’t changed when such changes have no functional or hardware benefits. Accordingly, absent any explanation or identification of benefits that compel modification, a POSITA would not be motivated to modify Müller with DePoi’s teachings. To the extent Petitioner argues that DePoi’s method prevents against more damage to the web than Müller’s method, it has provided zero support for such assertion.

b) Müller Would Not Benefit From “Additional Advantages of a Vacuum Brake”

The remainder of Petitioner’s motivation to combine again relies on a POSITA’s general awareness “of advantages to adding a of vacuum brake to Müller.” Pet., 55. Mr. Jobin’s declaration sets forth a nearly identical motivation to combine to Ground 1 discussed above, highlighting (1) improved threading; (2)

tension control; and (3) loop stabilization. Ex. 1003, ¶¶215-228. Because these arguments are substantively identical to those addressed above in Sections III.B(b)(1)-(3), Müller would not benefit from DePoi's vacuum chamber for the same reasons. Looking at Müller as a whole, the touted benefits of a vacuum brake do not support a motivation to combine because such benefits are either already realized by Müller (and would not be further improved by DePoi's teachings), or are wholly inapplicable to Müller altogether. *See supra* Sections III.B(b)(1)-(3).

IV. CONCLUSION

For all the reasons stated herein, Petitioner has failed to establish that the challenged claims of the '823 Patent are unpatentable. Patent Owner respectfully requests the Board find the challenged claims patentable over the grounds in the petition.

Respectfully submitted,

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APPENDIX OF EXHIBITS

Exhibit 2001	<i>Provisur Tech., Inc. v. Weber Inc. et al.</i> , Case No. 5:21-cv-06113, Dkt. 166, Transcript of Scheduling & Discovery Dispute Hearing, June 20, 2023
Exhibit 2002	<i>Provisur Tech., Inc. v. Weber Inc. et al.</i> , Case No. 5:21-cv-06113, Dkt. 216, Transcript of Scheduling Hearing, September 5, 2023
Exhibit 2003	<i>Provisur Tech., Inc. v. Weber Inc. et al.</i> , Case No. 5:21-cv-06113, Dkt. 214, Supplemental Scheduling Order, September 5, 2023
Exhibit 2004	<i>Provisur Tech., Inc. v. Weber Inc. et al.</i> , Case No. 5:21-cv-06113, Provisur Invalidity Contention Cover Pleading
Exhibit 2005	<i>Advanced Notice of Proposed Rulemaking 13</i> (“A Sand Revolution stipulation, April 21, 2023
Exhibit 2006	Declaration of Christina Canino In Support of Motion for Pro Hac Vice Admission
Exhibit 2007	Declaration of Professor Thomas R. Kurfess, Ph.D., In Support of Patent Owner's Responses to Inter Partes Review of U.S. Patent Nos. 10,647,013 and 11,331,823
Exhibit 2008	Sensor Technology Handbook, Jon S. Wilson
Exhibit 2009	Deposition Transcript of Mr. Michael Jobin

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24 that the foregoing Patent Owner's Preliminary Response to Petition for *Inter Partes* Review, excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits, contains 6,340 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: September 12, 2024

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing PATENT OWNER'S RESPONSE TO PETITION FOR INTER PARTES REVIEW was served on September 12, 2024, by email on the following counsel of record for Petitioner:

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