

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 IPR2024-00235
U.S. Patent No. 8,529,321

**PATENT OWNER'S SUR-REPLY
TO PETITION'S REPLY**

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I. INTRODUCTION

Petitioner's Reply to Patent Owner's Response ("Reply") fails to adequately address the failings within each of its proposed grounds. Indeed, Petitioner not only fails to remedy the fundamental flaws identified by Patent Owner in its Response ("POR"), but its Reply reveals new fatal flaws underlying each of the three grounds.

For Grounds 1 and 2, the POR established that Young's process is fat thickness agnostic and that Petitioner failed to identify any measurements in Young that determine the fat cover thickness. Petitioner's Reply newly advances a specific theory, purporting to show how Young's system *could* determine fat thickness. Notably, (1) the new specificity reveals that Petitioner fundamentally misunderstands Young's teachings and relies on a process that is incapable of ascertaining fat thickness, (2) Petitioner's continued reliance on what Young *could do*, rather than what it *does* is insufficient even if the Board were to look past Petitioner's flawed theory, and (3) even giving full credit to Petitioner's theory, it supports nothing more than the idea that Young's system could theoretically determine fat thickness of only a small portion of the fat cover removed. On this record, the only reasonable interpretation is that Young does not determine fat thickness and that its fat removal process is fat thickness agnostic.

Regarding Ground 2, Petitioner seeks to advance an entirely new theory in response to its expert admitting that Norrie's camera adds nothing to Young. The

Reply newly asserts that a POSITA could simply modify Young's controller 172 via a software change to include Norrie's thickness sensing functionality. *See Reply*, 14-15, 17. Not only does this new theory contradict the Board's understanding of Ground 2 at institution,¹ the specific proposal is entirely without substance. Indeed, Petitioner's expert conceded that he had not considered how Young's processes would change if Norrie's functionality were added. Accordingly, Ground 2 is a theory wholly devoid of substance and insufficient under the law.

Finally, Petitioner's Johnson-Belk combination in Ground 3 is legally improper and factually deficient. As an initial matter, the Johnson-Belk combination is a textbook example of hindsight bias. Petitioner has repeatedly pointed to the '321 Patent as a roadmap, guiding and purporting to justify the combination. Further, Petitioner's combination renders the Johnson reference inoperable for its intended purpose. Petitioner proposes replacing Johnson's probe-based sensors with Belk's camera system, which is technically incapable of producing the 3D map of a fat cover—the principal benefit of Johnson's invention.

Accordingly, the Reply fails to remedy the flaws identified in the POR, and the record strongly favors confirming patentability.

¹ *Institution Decision ("I.D.")*, 13 ("Provisur proposes incorporating Norrie's camera into Young's system as an additional data point for deriving the desired thickness of fat cover....").

II. GROUND 1: YOUNG DOES NOT ANTICIPATE

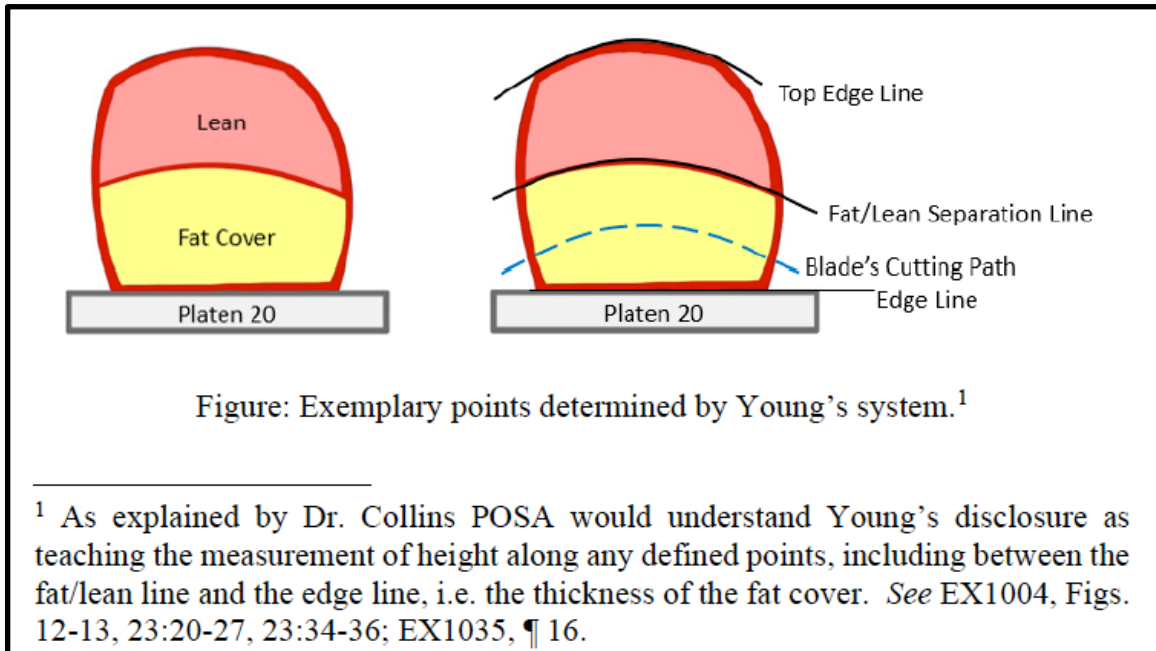
A. Claim 1[A]: Young Does Not Teach “Determination of the Thickness of the Fat Cover.”

1. *Petitioner fundamentally misunderstands Young’s teachings—fat thickness cannot be determined from the top view on which it relies*

Petitioner insists that Young determines the thickness of the fat cover, satisfying limitation 1(a). *Reply*, 3-7. In support, Petitioner relies on Young’s block 246, which Petitioner contends determines a fat/lean separation line and edge line. *Id.*, 4² (“[B]lock 246 of Young’s image processing system determines the fat/lean separation line (defined as the interface between the fat cover and the meat), the edge line (the line between the downward facing fat cover and the product support, platen 20)[.]”). Petitioner argues that “[t]he distance between the edge line and the fat/lean separation line corresponds to the thickness of the fat cover” and insists that a POSA “would understand Young as disclosing the determination of the thickness of the fat cover.” *Reply*, 6-7 (reiterating that “a POSA would understand Young as teaching that process image routine 240 determines the thickness of the fat cover defined by the distance between the fat/lean separation line and the edge line.”). Petitioner

² Petitioner also argues that block 246 determines a “top edge line.” *Reply*, 4-5. This line is actually determined in block 250. *See Young*, 23:34-36, Fig. 13. Because Petitioner never argues that the top edge line is used in any way to determine a fat thickness, Patent Owner will focus on Young’s teachings regarding the fat/lean separate line and edge line and Petitioner’s reliance on these lines.

provides the following illustrations that it contends represent the lines generated by Young's imaging system:



Reply, 5. In each instance, Petitioner relies on block 246 and Young's description of block 246 (i.e., *Young*, 23:12-27) to support its theory that Young is capable of determining lines, as illustrated above, from which the system could theoretically determine fat thickness. *Reply*, 3-7. No other description of determining a fat/lean separation line and edge line is identified or discussed by Petitioner.

Petitioner fundamentally misunderstands Young's disclosure. The fat/lean separation line and fat/platen intersection line (referred to as the "edge" line) relied upon by Petitioner **cannot** be ascertained from Young's block 246. Young's block 246 is a **top view** of the meat product as it sits on the platen. *Young*, 23:12-14 ("[I]n block 246, routine 240 generates a fat/lean separation like and an edge line from the

non-shadowed top view image.”). From this perspective, it is impossible for Young’s system to ascertain an edge line where the fat cover rests on the platen. It is similarly impossible from this view to ascertain a fat/lean separation line and any edge line from which the fat thickness could be determined.

Although Fig. 10c’s edge view is determined using end view camera 197, this end view is helpful to understand the data obtained at block 246 from the top view camera 198—the camera view on which Petitioner relies. As Dr. Collins confirmed, Fig. 10c shows the edge of Young’s pork side as it sits on the platen. Ex. 2011, 20:3-11 (confirming the pork side rests “more or less as it’s shown” in Fig. 10c with the platen underneath). Accordingly, the following annotated image accurately depicts an edge view of the pork side, the platen underneath, and the top view camera located above the pork side and looking down:

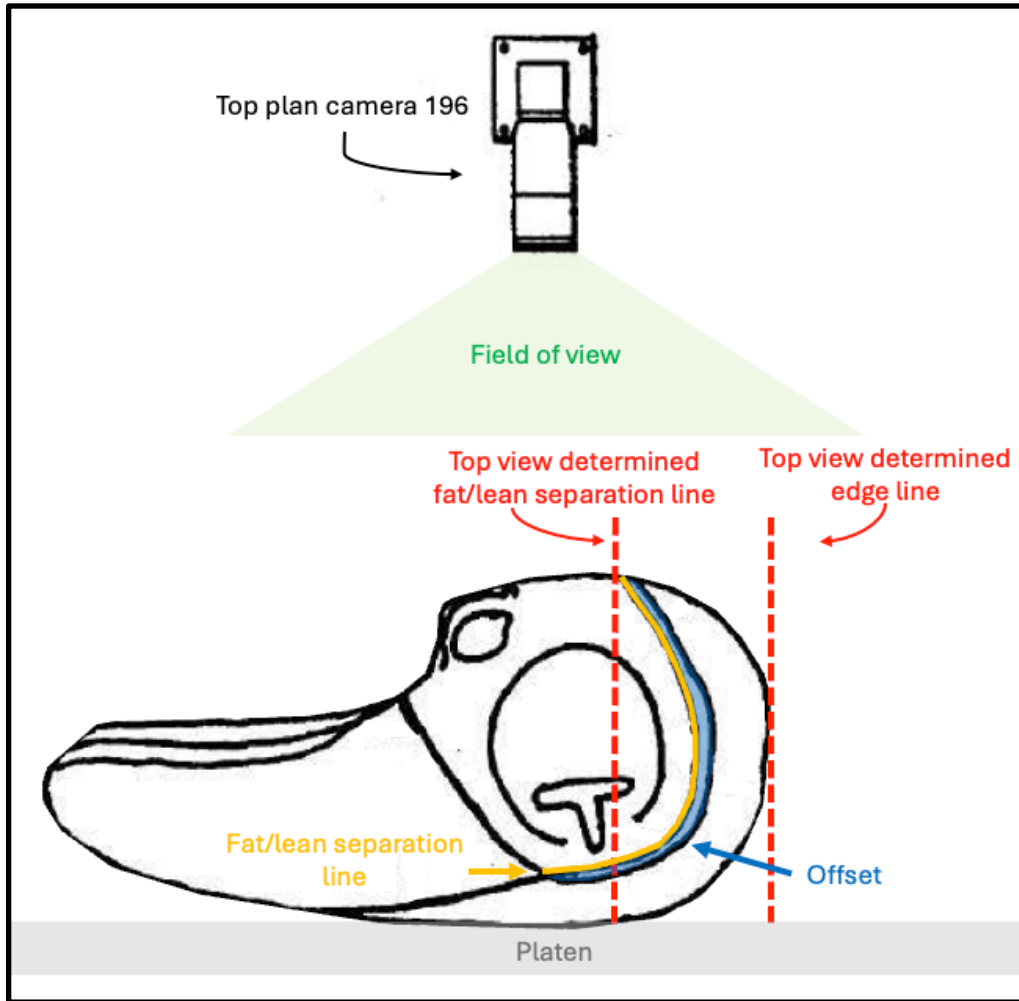
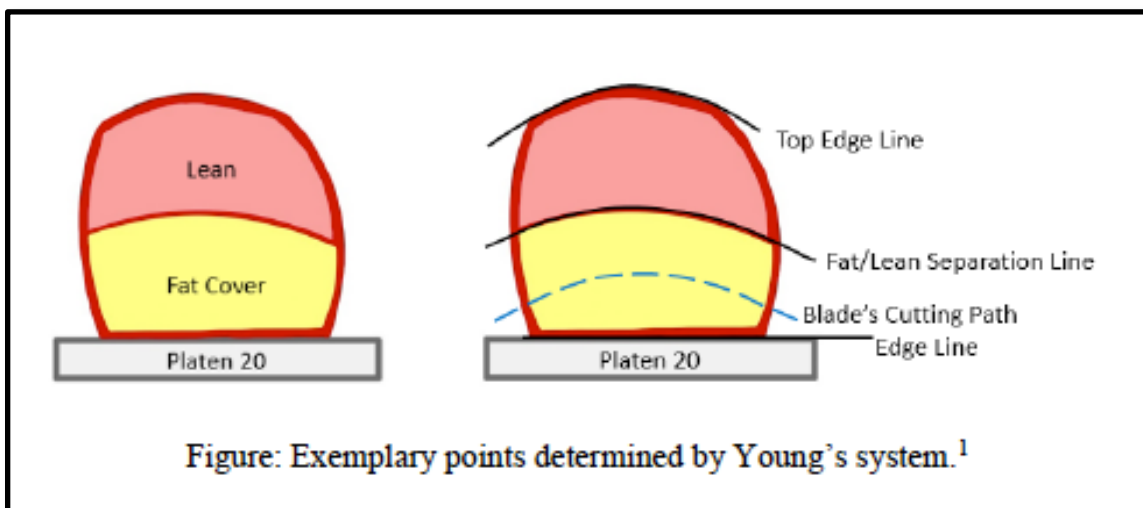


Fig. 10c (annotated). As indicated by the left dashed red line, the fat/lean separation line seen from the top view is where the fat and lean transition on the top portion of the pork side. Dr. Collins confirmed that this line will span the length of the pork from the top view. Ex. 2011, 23:7-18. As determined from the top view, Young states that the “edge line (representing the outer surface of the pork side proximate to the fat/lean line) will be distinguished by the interface between the fat covering and the platen or other supporting structure proximate the edge of the pork side.” *Young*, 23:23-27. As Dr. Collins confirmed, the fat covering visually transitions into

the platen along the length of the pork side. Ex. 2011, 23:19-26:11. This is indicated above by the right dashed red line. As is evident from the above annotations, the distance between the fat/lean separation line and the edge line determined from the top view **does not** represent the fat cover thickness. Indeed, that distance is significantly larger than any fat thickness on the pork side processed by Young's machine.

Petitioner's misunderstanding is further illustrated by its erroneous depiction of how to determine fat/lean separation and edge lines in meat product below.



Reply, 5. Dr. Collins confirmed that the illustration above was based on the edge line located on the platen and a fat/lean separation line located above it. Ex. 2011, 27:14-23. However, neither of the lines depicted above could be determined using the top view on which Petitioner relies. Dr. Collins even admitted that a top view of the pork side does not permit Young's system to see where the fat cover intersects the platen.

Id., 25:22-26:11 (explaining that, in “*the top view, you don’t – you don’t see the – the distance from the platen*”³ because the platen is into and out of the page”).

In sum, Petitioner has fundamentally misunderstood Young’s teachings. It relies exclusively on the theory that fat thickness could be determined as the distance between two lines ascertained by the top view generated by Young’s camera system. Yet that top view hides all the detail on which Petitioner’s theory depends. Accordingly, even using Petitioner’s proposed method for determining fat cover thickness, a POSITA would have understood that it was impossible to determine a fat cover thickness.

2. *Petitioner fails to establish that Young ever determines a fat cover thickness*

In addition to fatally misinterpreting Young’s teachings, Petitioner fails to demonstrate that Young ever actually determines the distance between the fat/lean separation line and edge lines. Instead, Petitioner relies on an unsupported logical leap that, because Young determines fat/lean separation and edge lines, a POSITA would have known that fat cover thickness *could be* determined by measuring the distance between said lines. At least because limitation [1(b)] requires determining a cut line “in dependence on” a measured fat thickness, it is insufficient that Young *could* theoretically determine a fat thickness. Rather, Petitioner must show that

³ All emphases added unless noted otherwise.

Young actually determines the fat thickness. On this critical point, Petitioner's theories find no support.

Petitioner ambiguously cites portions of Young's specification, including Young at 23:20-27 (describing how to distinguish the fat/lean and edge lines) and 24:34-39 (explaining that block 258 may calculate a height for ribs by pattern matching a desired point along the ribs). *Reply*, 6. From these, Petitioner concludes, without substantiation, that "[t]he distance between the edge line and fat/lean separation line corresponds to the thickness of the fat cover." *Reply*, 6. This conclusion is not supported by any explicit or implicit teaching in Young. Indeed, Young says nothing about the distance between these lines or about determining the fat thickness using any data points.

In an effort to distract from this lack of support, Petitioner assembles a patchwork of disparate portions of Young's specification, claiming that a POSITA would understand Young's image processing system to determine fat cover thickness. *Reply*, 3, 7. These string citations reveal the opposite. While Young indicates that its system can determine fat/lean separation and edge lines (23:12-14; 23:20-27; 23:28-30; 23:34-36), can measure the height, width, and length of the pork side (24:10-15; 24:18-22), and can use a desired point along the ribs to calculate their height (24:34-39), none of these disclosures support Petitioner's ultimate contention that Young actually uses any of this data to determine fat cover

thickness. On the contrary, these citations merely clarify that Young expressly could and does (1) calculate the (a) height, width, and length of the entire pork side and (b) height of ribs and (2) determine the fat/lean separation line and edge lines. Far from helping the Petitioner, Young's selective and clear disclosure of these determinations underscores that when Young's system performs a specific measurement, it is explicitly described. Petitioner's assertion that Young determines fat cover thickness, in contrast, is based entirely on unsupported speculation, not evidence. As such, Petitioner's theory fails to bridge the critical gap between identifying fat/lean separation and edge lines and the claimed determination of fat cover thickness.

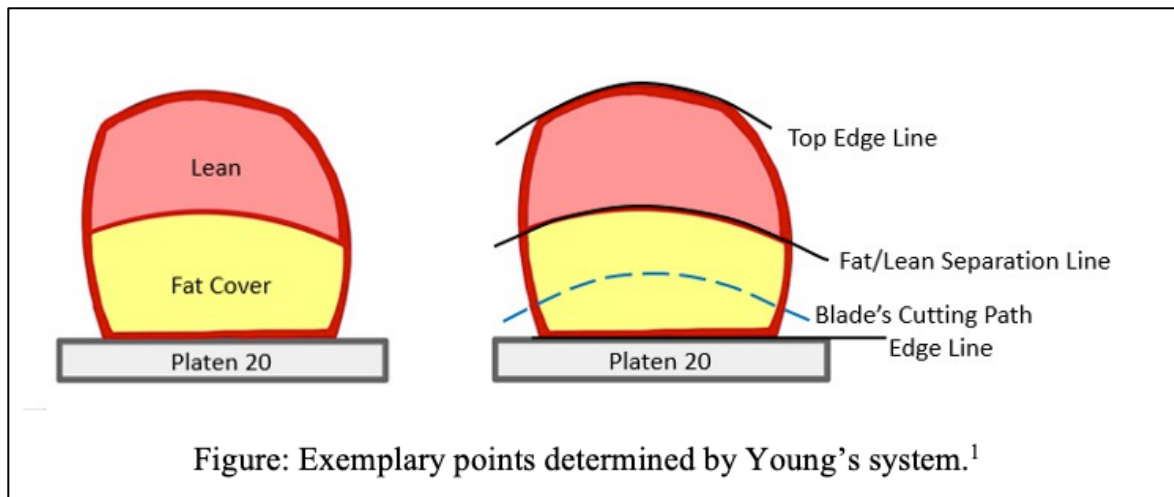
B. Claim 1[B]: Young's Fat Cover Separation of the Fat Cover from the Flesh Does Not Depend on a Determined Fat Cover Thickness

1. Even if Petitioner were correct about Young's ability to determine fat thickness between a fat/lean separation line and edge line, this represents only a small portion of the cut line

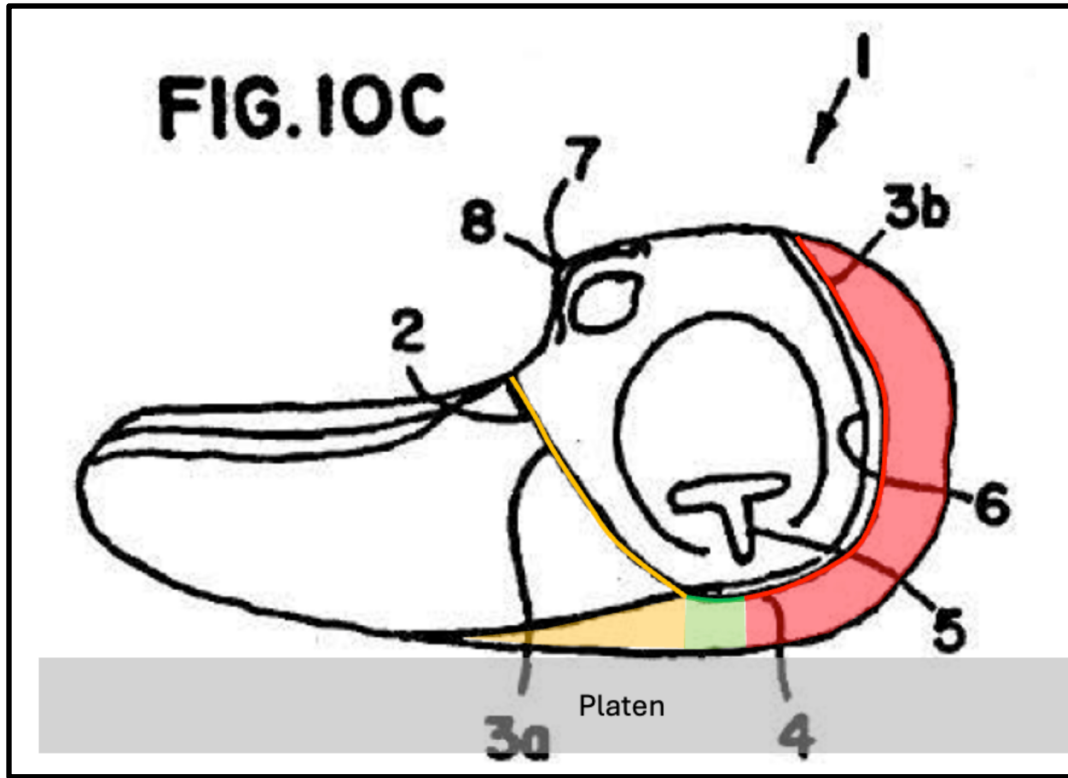
Even accepting, *arguendo*, Petitioner's unsupported theory that Young's image processing system could determine the thickness of fat cover between the platen and fat/lean separation line, this represents only a small fraction of the actual cut line in Young. The remainder of Young's cut line is necessarily agnostic to the thickness of fat. This supports concluding that, even if Young were theoretically capable of determining fat thickness in specific areas, it does not use any fat cover

thickness determinations to determine the cut line, as required by the Challenged Claims.

As discussed above, Petitioner contends that Young's imaging system can ascertain data as depicted below, enabling the system to theoretically calculate the distance between the fat/platen interface and the fat/lean interface:



Reply, 3-7. Even if Young were capable of ascertaining the information Petitioner alleges, that fat cover thickness data is limited to a small portion of the removed fat cover as depicted below in green:



Young, Fig. 10(c) (annotated). Indeed, only the green portion represents the portion of removed fat in which the distance between the fat/lean separation line and fat/platen interface line (referred to as the “edge” line) represents the thickness of the removed fat cover. The cut line to the left (annotated yellow) does not remove fat at all and is irrelevant to Petitioner’s theories of invalidity. Finally, the cut line to the right (annotated red) removes a portion of fat that does not touch the platen and, accordingly, is not ascertainable by determining the difference between the two lines on which Petitioner relies.

A POSITA would understand that Petitioner has presented a theory that *Young* could only accurately determine fat cover thickness in a very limited area

(green area). Because the vast majority of the cut line must be determined without dependence on the fat thickness, it is not reasonable to conclude that a small portion of Young's cutting is made "in dependence on" a fat thickness determination, as claimed. Instead, as with the remainder of the cut line, the green portion of Young's cut is agnostic to fat cover thickness.

2. Young's specification defines two variable that do define the cut line—neither is fat thickness

Young explicitly teaches that its fat cover separation system relies on one or both of the fat/lean separation line or the blade bone. Contrary to Petitioner's theory, these are the only reference points/lines that dictate Young's fat cover cut line.

Young repeatedly and consistently describes its fat cover separation as a cut that follows a preset distance from a reference point, without ever referencing a fat cover thickness determination. *Young*, 4:5-13; 4:36-38; 4:57-59; 20:50-53; 25:17-24; 25:65-26:2; 26:13-16; 26:36-40. Young does contemplate one specific deviation. Namely, when a blade bone projects into the fat cover, the system adjusts the cut to avoid the blade bone by a fixed distance. *Young*, 25:25-40. Whether or not this deviation is required by the position of a blade bone, the cut line remains agnostic to fat thickness.

In sum, Petitioner's claim that Young's knife assembly depends on a fat cover thickness determination is unsupported by the evidence. Petitioner's argument is both speculative and logically flawed. Young's specification unequivocally

demonstrates that its system does not require nor consider fat thickness determinations. Instead, the cutting profiles are guided solely by fixed offsets from clearly defined reference points.

III. GROUND 2: YOUNG IN VIEW OF NORRIE DOES NOT RENDER THE '321 PATENT OBVIOUS

At no point in this proceeding has Petitioner or its expert explained how Norrie's incorporation into Young's system would actually change Young's system. Petitioner initially argued that Norrie's camera would be added to Young's system. Rendering this theory moot, its expert testified that Norrie's camera was entirely duplicative of Young's existing cameras. With its Reply, Petitioner and its expert newly suggest that Norrie's software might be added to Young. On cross-examination, however, Petitioner's expert confirmed he had not considered how Young's process would change with the addition of Norrie's software. Accordingly, there is no cognizable theory underlying the combination of Young and Norrie, and Ground 2 necessarily fails.

As set forth in Section II above, Young alone does not measure fat cover thickness or separate fat cover in dependence on fat cover thickness. Because Norrie adds nothing to Young in Petitioner's proposed combination, Petitioner is wrong that Patent Owner "does not dispute that [Ground 2] combination[] teach[] all the limitations of the '321 [P]atent." *Reply*, 1. Ground 2 fails to teach the same limitations as Ground 1.

A. Petitioner's Drastic Theory Shift Should be Rejected

Petitioner now claims its combination of Young and Norrie “would implement Norrie’s fat thickness sensing functionality into the image processing of Young, for example, via a software change.” *Reply*, 14 (emphasis omitted). This new position contrasts sharply with the Petition, which proposed adding Norrie’s camera hardware to improve Young’s system. *Petition*, 51-54 (“Young’s loin separator and imaging system is improved with *Norrie’s imaging capabilities*”; “would only require routine modifications, *like changing the cameras and connecting the components*”; “control system 170 *may be modified to incorporate different accessory components on apparatus 10*.”). The Board initially understood Petitioner’s combination as incorporating Norrie’s camera to enhance Young’s imaging capabilities. *I.D.*, 13 (stating that it understood Petitioner’s combination as improving Young’s system by “*incorporating Norrie’s camera* into Young’s system as an additional data point for deriving the desired thickness of fat cover that Young’s controller already determines.”). Petitioner’s Reply theory is a dramatic shift, newly proposing that Young’s processing might be modified pursuant to Norrie’s software teachings. *Reply*, 14-15.

This shift is a transparent attempt to address its expert’s damaging admission that there was *no technical reason* to add Norrie’s camera to Young’s system. Ex. 2006, 43:6-44:2. Petitioner now pivots to a new combination of the references

explaining that a POSITA would simply modify Young's image processing algorithm to measure fat thickness. Ex. 2006, 42:19-22. Because the Petition failed to adequately disclose or support this software-based combination, it should be rejected as a late-disclosed and new rationale. Indeed, the Petition included no discussion of incorporating any software or algorithms from Norrie. *See Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1330 (Fed. Cir. 2019) (holding that "an IPR petitioner may not raise in reply an 'entirely new rationale'" post-institution).

B. Petitioner's Software-Based Theory is Entirely Lacking Detail

Even if the Board were to consider Petitioner's new software-based theory, the record in support is woefully underdeveloped. As PO noted in its POR, Petitioner has provided insufficient details on how Norrie would be combined with Young. *POR*, 25-29. Even in its second attempt at explaining its combination, Petitioner has not indicated in any level of detail just *how* a POSITA would modify Young to use Norrie. Neither Petitioner nor its expert has explained how Norrie's functionality would change Young's process. Instead, they rely on vague generalities regarding purported benefits of increased accuracy, improved yield, etc. *Reply*, 13-15. At no point in this discussion does Petitioner ever explain *how* any of these benefits would be realized via the addition of Norrie's teachings.

Like the *Walt Disney* case cited in the POR, Petitioner's failure to explain how Young's system has been modified to use Norrie's thickness determinations is fatal to its argument. Specifically, Petitioner has failed to explain whether the secondary reference was "meant to supplant" the functionality in the primary entirely or "whether the two systems are meant to coexist in some fashion." *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").

C. Petitioner Fails to Advance a Sufficient Motivation to Combine Young and Norrie

Petitioner notes that its motivation to combine Young and Norrie concerns Young's disclosure that explicitly states, "*additional imaging and motion functionality* may be included to provide *more sophisticated profiles* using the preferred scribe saw and knife assemblies." *Petition*, 52-53 (citing *Young*, 20:17-24); *see also Reply*, 13 ("Young is clear that it contemplates adding to or modifying its system *in support of greater functionality and efficiency*"). Accordingly, Petitioner's motivation to combine relies on Norrie's ability to provide *additional* functionality. On cross-examination, however, Petitioner's expert could not explain how Young's process would even change, let alone identify new functionality realized by the proposed modification.

Indeed, when asked how Young's unmodified system and the Young-Norrie system differed in determining cutlines, Petitioner's expert stated, "I don't believe there's a – there's a fundamental difference." Ex. 2011, 34:2-6. And, when asked how Young's unmodified system would cut differently than the Young-Norrie combination, Petitioner's expert conceded that he "really ha[dn't] given it much thought; so I'd have to think about it". Ex. 2011, 33:10-34:1.⁴ Dr. Collins's latest testimony aligns with his previous analysis, where he stated that "Norrie is, frankly, redundant of what's already disclosed in Young." Ex. 2006, 41:13-22.

Because even Dr. Collins can't explain how Young's system would change if modified pursuant to Norrie, if at all, there can be no motivation to combine the references, and the obviousness combination should be accorded no weight. *South-Tek Sys., LLC v. Engineered Corrosion Sols., LLC*, 748 F. App'x 1003, 1006-1007 (Fed. Cir. 2018) (upholding the Board's determination that there was no motivation to combine where the teachings from the secondary reference failed to add any function not already disclosed in the primary reference).

⁴ Dr. Collins speculated that Norrie's functionality might allow Young's system to generate an error code if the user asks to retain more fat on the pork loin than is available to retain. There is no discussion of such a benefit in the written record, nor is it clear that a customer would ever desire to retain more fat than is available on the pork side. Accordingly, this speculative benefit should be accorded no weight.

D. Young Teaches Away from Norrie

As PO explained in its POR, Young expressly identified Norrie in its Background section and disparaged Norrie as an overly simplistic cutting machine limited in its degree of control. *POR*, 30. Petitioner's Reply does not dispute that Norrie is limited in its degree of control. Nor does Petitioner dispute that Young expressly disparages such systems. Instead, Petitioner argues that Young's disparagement is limited to Norrie's cutting functionality and insists that a POSITA might still be motivated to look to Norrie for its fat sensing functionality. *Reply*, 13-14. As set forth in the preceding sections, the proposed combination does not actually use any fat sensing functionality from Norrie, so the point is moot.

However, Petitioner does not simply push back on the teaching away argument. It also insists that Young expressly motivates a POSITA to look to Norrie as a viable source for additional functionality. *Reply*, 13-14 ("Young contemplates incorporating other imaging/sensing systems and cites to Norrie as an example."). Petitioner claims too much of Young's discussion. Young says nothing about Norrie's use of imaging or sensing functionalities. Instead, Young's reference to Norrie and similar prior art systems focuses on criticizing said systems for their limited control, leading to "***unacceptable waste product and lower yields.***" *Young*, 2:18-51. Far from suggesting Norrie as a viable improvement, Young identifies it as an inadequate prior art system limited in control and incapable of achieving optimal

results. *Id.* In other words, Young indicates that Norrie fails to achieve the goals that the sophisticated cutting profiles disclosed by Young were intended to achieve.

IV. GROUND 3: THE JOHNSON AND BELK COMBINATION FAILS

As discussed below, the Johnson-Belk combination is fatally flawed because it (1) relies on improper hindsight bias; (2) renders Johnson inoperable for its intended purpose, relying on cameras that *cannot* obtain data necessary for Johnson's 3-D fat mapping; and (3) fails to teach the "thickness of the fat cover" limitation.

A. The Johnson-Belk Combination is Improper as it is the Result of Hindsight Bias

It is black letter law that a challenged patent may not be used as a roadmap to construct and justify an obviousness combination. "The inventor's own path itself never leads to a conclusion of obviousness; that is hindsight." *Merck Sharp & Dohme B.V. v. Warner Chilcott Co., LLC*, 711 F. App'x 633, 636 (Fed. Cir. 2017). "To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction—an illogical and inappropriate process by which to determine patentability." *Sensonic, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996).

Here, Petitioner improperly used the '321 Patent as a roadmap to construct the Johnson and Belk combination. The '321 Patent explained that the disadvantage of

conventional meat measurement devices was their reliance on inserting sensors (probes) into the meat product to determine fat cover thickness, which often damaged the meat product. Ex. 1001, 1:11-36. The '321 Patent's proposed solution replaced those probes with meat imaging technology to measure meat characteristics (i.e., fat cover thickness) in a contactless manner, avoiding meat damage. Ex. 1001, 1:41-44.

As illustrated in its Reply, Petitioner has fatally used the '321 Patent as a roadmap to construct and justify its combination of Johnson and Belk. Johnson is a probe-based system of the type the '321 Patent sought to improve upon, and Belk is an imaging system for grading meat. Neither reference recognizes the problems caused by sensor-based meat measurement devices identified in the '321 Patent. The Reply argues that "clear and significant benefits" motivate "the proposed combination." *Reply*, 22. In support, the Reply insists that "[b]y the time of the '321 patent, [probe-based] punctures were known as undesirable, as they cause significant hygiene concerns and increase the risk of disease and product recalls." *Reply*, 22-23. In support, Petitioner cites two newly-submitted background references concerning general hygiene with meat processing and the Challenged Patent. Notably, only the Challenged Patent says anything about probe-based systems. Accordingly, Petitioner's purported motivation to combine Johnson and Belk—that probe-based systems were known to be undesirable—is supported only by the Challenged Patent.

The Petition and expert declaration, too, cited the Challenged Patent to construct and justify the proposed combination. *See Petition*, 62-63; Ex. 1035, ¶¶43, 47. This is the epitome of hindsight reconstruction and must be rejected. *Sensonics, Inc.*, 81 F.3d at 1570; *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377 (Fed. Cir. 2012) (explaining that improper reliance on hindsight includes using “the invention to define the problem that the invention solves”); *Purdue Pharma L.P. v. Depomed, Inc.*, 643 F. App'x 960, 963, 966 (Fed. Cir. 2016) (affirming the Board's finding that “to the extent that Purdue [Petitioner] relied on the nature of the problem to be solved to supply a reason to combine the prior art, it improperly used hindsight by defining the problem with a recitation of the challenged claims.”); *Sci. Plastic Prods., Inc. v. Biotage AB*, 766 F.3d 1355, 1362 (Fed. Cir. 2014) (Chief J. Moore dissenting) (“It is troubling that the majority and the Board rely on the inventors' disclosure of the problem their inventions solve as the primary basis for modifying the prior art. This is hindsight of the worst kind”); *Insite Vision Inc. v. Sandoz, Inc.*, 783 F.3d 853, 859 (Fed. Cir. 2015) (“In considering motivation in the obviousness analysis, the problem examined is not the specific problem solved by the invention.”).

B. The Johnson-Belk Combination Renders Johnson Inoperable for Its Intended Purpose

“A proposed modification [is] inappropriate for an obviousness inquiry when the modification render[s] the prior art reference inoperable for its intended purpose.” *In re Fritch*, 972 F.2d 1260, 1265 n.12 (Fed. Cir. 1992). The Johnson-

Belk combination does just this. As set forth in the POR, Johnson's intended purpose is to create a three-dimensional map of internal variations in the fat cover of a meat product using sensor probes and to trim the fat based on those measurements. *POR*, 32-39. This 3D mapping is intended to account for the "erratic" nature of fat/lean contours, which had previously required humans to remove. *POR*, 34. (citing *Johnson*, 1:18-21). The Johnson-Belk combination proposes replacing Johnson's probe-based fat thickness measurement with Belk's camera system. *Petition*, 54-55; *POR*, 32. However, as explained in the POR, Belk's imaging system cannot create a 3D map of internal variations in the fat cover. *POR*, 39-44. Thus, Petitioner's proposed modification of Johnson using Belk's teachings would destroy Johnson's entire purpose: generating a 3D map of a meat product that includes fat cover thickness measurements to guide fat trimming. *Johnson*, 1:50-55, 2:15-35. As such, a POSITA would not have been motivated to combine Johnson's probe-based fat thickness measurement with Belk's system. *See Medtronic, Inc. v. Teleflex Innovations S.a.r.l.*, 69 F.4th 1341, 1347–50 (Fed. Cir. 2023) (affirming the Board's finding that a POSITA would not have been motivated to combine two medical devices where the proposed combination would destroy one reference's intended purpose).

The Reply briefly acknowledges this flaw in its obviousness theory and attempts to brush it away, claiming that the benefits of non-probe measurements

outweigh destroying the primary purpose of Johnson's invention: "[E]ven if Belk were limited to a conventional camera unable to measure interior fat, Patent Owner ignores the clear and significant benefits of the proposed combination provides, which would motivate a POSA to arrive at the combination regardless." *Reply*, 22. Unsurprisingly, Petitioner cites no support for the proposition that obviousness can be established even where it destroys the base reference's principle of operation simply because some other benefit may be realized. Such a theory is particularly flawed where the alleged benefit of the combination is derived using hindsight reconstruction.

1. The Johnson-Belk combination is limited to Belk's camera-based embodiments

As set forth in the POR, Petitioner and its expert relied exclusively on Belk's color camera embodiment of imaging system 12 in combination with Johnson's system. *POR*, 39-40 (noting that no other embodiments were discussed with respect to any limitation of the Challenged Claims and that many challenged dependent claims exclude Belk's other imaging system embodiments). Further, the POR explained that Belk's color camera obtained surface image information only and cannot be used to obtain fat thickness information used to generate Johnson's 3D map. *Id.*, 41-44. The Reply does not dispute that Belk's color camera would be incapable of generating data from which Johnson's system could create a 3D map of the fat cover. Accordingly, there is no dispute on this record that, if Ground 3 is

limited to Belk's color camera embodiment, Johnson's principle of operation would be destroyed.

The Reply insists that Ground 3 is not so limited. *Reply*, 21-22. In support, the Reply points out that the Petition generally noted that Belk's imaging system 12 "may be any imaging device known to a POSA." *Id.*, 21 n.5. Tellingly, the Reply does not (1) identify any discussion of implementing any embodiment other than the color camera or (2) wrestle with the fact that many of the dependent claim theories exclude reliance on the other embodiments. As set forth in the POR, and as confirmed by Petitioner's silence on Reply, the Board should conclude that Ground 3 relies on Belk's color camera embodiment of imaging system 12 only.

C. Belk Does Not Measure Fat Cover Thickness

Belk discloses a method for predicting the palatability of meat by analyzing image data of specific "characteristic[s] of interest" within an "area of interest" of a meat product. *Belk*, 3:18-25, 8:59-9:26. Critically, as *Belk* discloses and Dr. Reinholtz confirms, Belk's area of interest refers to a small, localized portion of the meat product, not a comprehensive (macro) assessment of the entire specimen. *Belk*, 8:59-9:26; EX1036, 162:21-163:16, 164:12-166:7, 180:15-181:5. As Dr. Reinholtz explained, "Dr. Collins [] confused looking at an area of interest, which is a sub-region within an image, with measuring more of a macroscopic property." Ex. 1036, 173:9-15 (further stressing that *Belk* does not disclose macro determinations such as

“measuring the thickness of fat”). Instead, the analysis in Belk focuses on intramuscular characteristics such as marbling and other qualitative metrics. *Belk*, 9:19-22 (“within the portion of the image taken from the muscle of interest, determinations can be made of the quantity, distribution, dispersion, texture, and firmness of marbling (intramuscular fat deposited within the muscle)”).

In his supplemental declaration, Dr. Collins disputes this interpretation of Belk, noting that Belk teaches its “area of interest” may “comprise at least an entire muscle of the carcass.” Ex. 1035, ¶62. However, this muscle of interest discussion in Belk actually highlights the fact that Belk ***does not*** measure macro properties such as fat thickness. Indeed, Belk teaches that color data about areas of interest is derived from Belk’s imaging system. *Belk*, 8:25-58. From the color data, Belk’s system isolates the areas of interest that suggest muscle and uses this data to define an outline of a muscle of interest. *Id.*, 8:59-9:2. Once the muscle of interest is identified, Belk teaches that any surrounding tissue, including fat, can be rejected and not examined:

Areas with values of b* compatible with the muscle of interest are then examined for their L * and a* scores for verification and ***rejection of surrounding tissues*** invading the outline of the muscle of interest. ***Further examination need not be performed on areas*** with L *, a*, and b* scores suggestive of bone, connective tissue, and ***fat***.
Belk, 8:66-9:4.

Accordingly, Belk does not determine the thickness of the fat cover of an entire meat specimen.

V. CONCLUSION

For all the reasons stated herein and in the POR, Petitioner has failed to establish that the challenged claims of the '321 Patent are unpatentable.

Respectfully submitted,

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Patent Owner's Sur-Reply
U.S. Patent No. 8,529,321

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APPENDIX OF EXHIBITS

Exhibit 2011	Second Deposition Transcript of Dr. John Collins
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CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24 that the foregoing Patent Owner's Sur-Reply, 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 5,483 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: January 17, 2025

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I hereby certify that a true and correct copy of the foregoing Patent Owner's Sur-Reply was served on January 17, 2025, by email on the following counsel of record for Petitioner:

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