

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TROVE BRANDS, LLC

Petitioner

v.

CAMELBAK PRODUCTS, LLC

Patent Owner

IPR2025-00140

Patent 11,851,250

DECLARATION OF GLENN E. VALLEE, PH.D.

IN SUPPORT OF PETITIONER'S REPLY

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

Dated: December 9, 2025

By:

Glenn E. Vallee /
Glenn Vallee, Ph.D., P.E.

TABLE OF CONTENTS

Page No.

I. A POSITA’S UNDERSTANDING OF “PIVOTAL MOVEMENT ... WITH THE PIVOTAL MOUNT”	3
II. OPERATION OF NAKAJIMA: PIVOTAL MOVEMENT WITH THE PIVOTAL MOUNT.....	17
III. A POSITA’S UNDERSTANDING OF “MOUTHPIECE”	44
IV. RIBARITS DISCLOSES THE CLAIMED “MOUTHPIECE”	49
V. RIBARITS DISCLOSES THE CLAIMED MOUTHPIECE “COUPLED TO THE MOUNT OUTLET” AND “DISPOSED ON THE PIVOTAL MOUNT” FOR PIVOTAL MOVEMENT WITH THE PIVOTAL MOUNT	53
VI. CONCLUSION.....	56

1. I, Glenn Vallee, Ph.D., am making this declaration at the request of Trove Brands (“Petitioner”) in support of its Petitioner’s Reply in the *Inter Parties* Review of U.S. Patent No. 11,851,250 (“the ’250 patent”). This is my second declaration in this proceeding.

2. In this second declaration, I provide opinions related to Patent Owner’s Response (Paper 19), Mr. Jobin’s declaration (Ex. 2016), and the Board’s Institution Decision (Paper 14).

3. In conducting the analysis and forming the opinions set forth in this declaration, I considered, in addition to my knowledge and expertise in the relevant field and the materials listed in my first declaration (Ex. 1002), the following materials, and any other materials cited herein:

- Paper 14 – Institution Decision Granting *Inter Partes* Review, June 6, 2025
- Paper 19 – Patent Owner’s Response, September 16, 2025
- Ex. 1001 – U.S. Patent No. 11,851,250 (“the ’250 patent”)
- Ex. 1004 – Certified English Translation of Japanese Patent Publication No. 2002-211613 (“Nakajima”)
- Ex. 1006 – Certified English Translation of International Publication No. WO 2004/063042 (“Ribarits”)
- Ex. 1009 – Excerpts of the File History of the ’250 Patent
- Ex. 1010 – U.S. Patent Application Publication 2005/0029271 (“McDonough”)

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140

- Ex. 1013 - 11/25/2025 Deposition Transcript of Michael Jobin from IPR2025-00140
- Ex. 1014 - U.S. Patent 6,032,831 (“Gardner”)
- Ex. 1016 - U.S. Patent No. 6,305,043 (“Rosnak”)
- Ex. 1017 - U.S. Patent Appl. Publ. No. 2017/0208952 (“Simon”)
- Ex. 1018 - U.S. Patent No. 5,426,990 (“Francart”)
- Ex. 1019 - 07/25/2025 Deposition Transcript of Michael Jobin from IPR2024-01137
- Ex. 1020 - Merriam-Webster Collegiate Dictionary – “on”
- Ex. 2002 - File history of Ex Parte Reexamination Control No. 90/015,192 regarding U.S. Patent No. 10,676,255
- Ex. 2005 - Merriam-Webster Dictionary – “mouthpiece”
- Ex. 2007 - American Heritage Dictionary – “pivot”
- Ex. 2008 - Cambridge Dictionary – “pivot”
- Ex. 2009 - Oxford Concise English Dictionary – “pivot”
- Ex. 2010 - McGraw-Hill Dictionary of Scientific and Technical Terms – “pivot”
- Ex. 2011 - Merriam-Webster Dictionary – “pivot”
- Ex. 2017 – Merriam-Webster Dictionary - “with”
- Ex. 2019 - Young & Freedman – University Physics Textbook
- Ex. 2020 – Sciencing – “Rotational Motion (Physics): What Is It & Why It Matters”

4. I understand that when interpreting the claims of the ’250 patent and evaluating the prior art, I must do so based on the perspective of a person having

ordinary skill in the art at the relevant priority date of the '250 patent. I have been asked to assume that the priority date for claims 1, 2, and 4-6 is April 11, 2005. I have applied the same level of ordinary skill in the art described in my prior declaration. Ex. 1002, ¶25.

5. I am being compensated at my customary hourly rate for my work in this matter, and I am being reimbursed at cost for my reasonable expenses. My compensation does not depend in any way on the outcome of this proceeding. I have no financial interest in any of the parties to this proceeding.

6. I have based my opinions on the qualifications of one of skill in the art on my review of the '250 patent, the relevant prior art, and my experience. In the early 2000's, I was familiar with design principles common in the mechanical arts. I frequently worked with and supervised engineering students and junior engineers who had the requisite knowledge and experience to make and use the articles described in the '250 patent. Based on my experience and knowledge, I believe that people of the above-defined level of education and skill would have the capability to interpret and understand the invention claimed in the '250 patent and the scientific and engineering principles applicable to the pertinent art.

**I. A POSITA'S UNDERSTANDING OF "PIVOTAL MOVEMENT ...
WITH THE PIVOTAL MOUNT"**

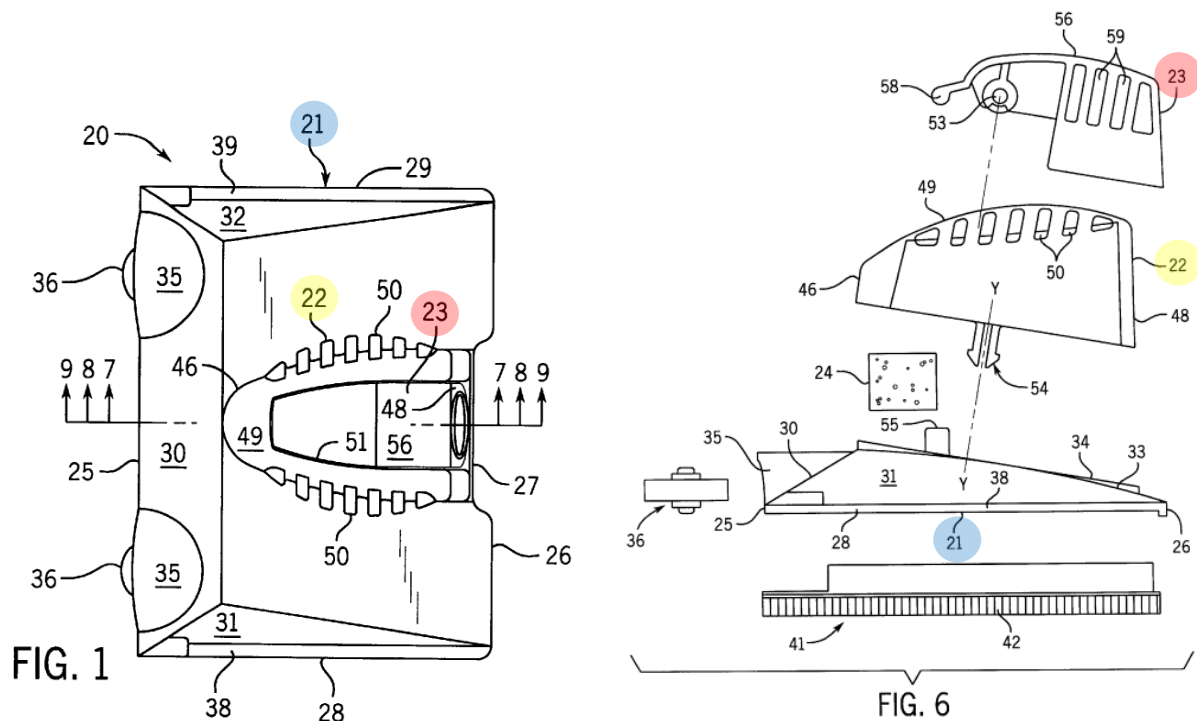
7. In my first declaration in this IPR, I applied the plain and ordinary

meaning of the terms “two joints ... define a pivotal axis of the pivotal mount for pivotal movement of the pivotal mount relative to the cap assembly base” and “mouthpiece ... for pivotal movement with the pivotal mount.” Ex. 1002, ¶¶13, 38; Ex. 1001, claims 1, 7, 13. My understanding of that plain and ordinary meaning remains the same. In light of the statements in the Patent Owner’s Response (Paper 19) and Mr. Jobin’s POR declaration (Ex. 2016), the Board’s discussion of the terms in the Institution Decision (Paper 14), and CamelBak’s reliance on physics-textbook concepts different from how persons having ordinary skill in the art (“POSITAs”) understand mechanical linkages, I provide the following clarification of what a POSITA would understand those plain and ordinary meanings to encompass.

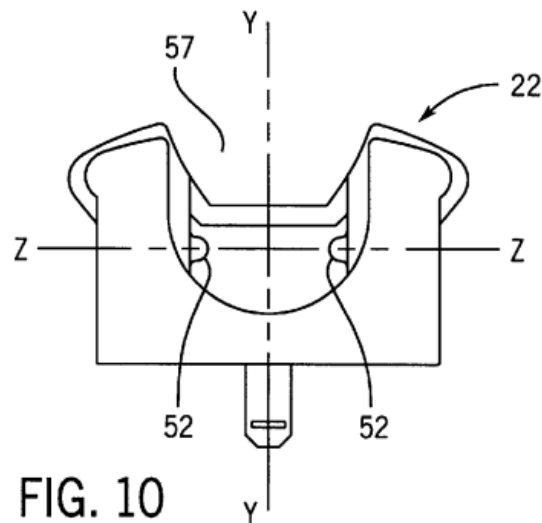
8. A POSITA would understand that, in the context of cap assemblies and mechanical linkages—and the ’250 patent in particular—“pivotal movement” refers broadly to motion that occurs by virtue of a hinge or pivot joint, and is not limited to the textbook notion of a perfectly rigid body undergoing pure rotation about a single fixed axis with every point tracing a circle of constant radius. *See* Ex. 2007 (defining “pivots” as “[t]he act of turning on or as if on a pivot” and “to cause to rotate, revolve, or turn”); Ex. 2008 (“to turn or twist”); Ex. 2009 (“the central pint, pin, or shaft on which a mechanism turns or oscillates”); Ex. 2010 (“A short, pointed shaft forming the center and fulcrum on which something turns, balances, or oscillates”); Ex. 2011 (“turning on or as if on a pivot”). Real-world mechanisms

often involve multiple joints or compound linkages, and their resulting movement is routinely understood as pivoting when it is governed by a hinge-based relationship. Nothing in the field requires each subcomponent of a multi-joint assembly to mirror the precise local rotation of a proximal hinge, or to avoid any local rotational components that might appear to move away from the direction of the main hinge rotation.

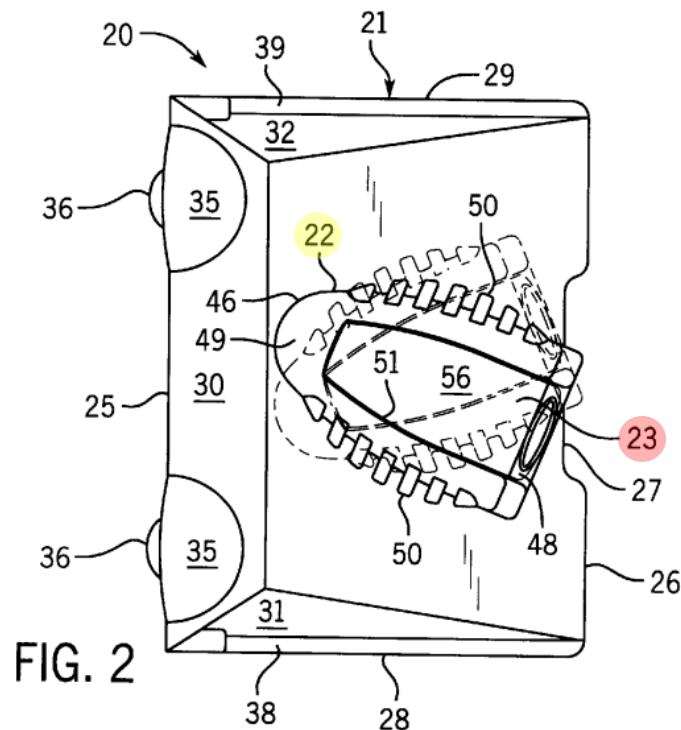
9. This understanding is reflected in the teachings of prior-art mechanisms such as Rosnak (U.S. Patent No. 6,305,043; Ex. 1016), which discloses pivotal movement occurring about multiple axes within a single assembly. Rosnak describes “[a] paint applicator (20) has a base (21) [blue], a handle (22) [yellow] mounted on the base for pivotal movement between first and second angular positions in a plane substantially parallel to the surface being painted about a first axis (y-y), an adapter (23) [red] mounted on the handle for pivotal movement between extended and retracted positions in a plane substantially perpendicular to such surface about a second axis (z-z).” Ex. 1016, abstract. These structures are shown in the following figures:



Id., Figs. 1, 5 (color added). As Rosnak explains, accordingly, “the handle has two degrees of freedom [about y-y and z-z] in that the handle is mounted for pivotal movement relative to the base, and the adapter is mounted for pivotal movement relative to the handle. This affords a high degree of flexibility particularly when painting overhead.” *Id.*, 5:29-34.



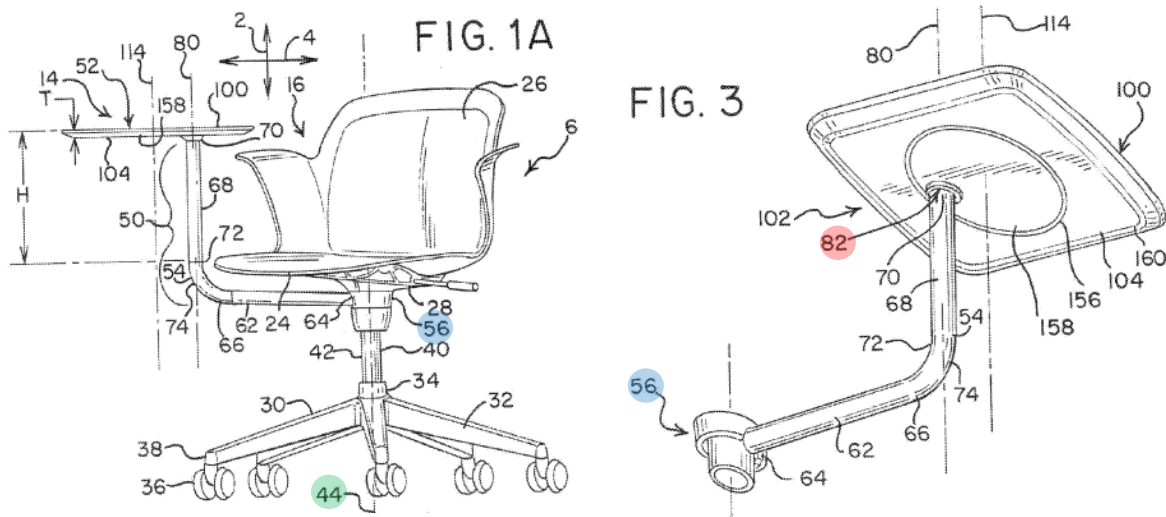
Id., Fig. 10. Rosnak illustrates the pivotal movement of the handle (22) [yellow] and adapter (23) [red] together relative to the base (21) about the y-y axis in Figure 2:



Id., Fig. 2 (color added); *see also id.*, 3:35-46, 4:36-40. Rosnak's configuration demonstrates that when a proximal component pivots about a defined hinge axis, the

distal components connected through the linkage likewise undergo pivot-driven displacement—even if their local rotations differ in direction, magnitude, or path—which is typical of real-world multi-joint or compound mechanical assemblies.

10. This understanding is also reflected in the teachings of Simon (U.S. Patent Appl. Publ. No. 2017/0208952; Ex. 1017), which discloses pivotal movement occurring about multiple axes within a single assembly. Simon describes “a method for adjusting a position of a worksurface includes rotating a first mounting portion [56] [blue] of a support [54] about a first pivot axis [44] [green], and thereby pivoting the support [54] and a second mounting portion [82] [red] about the first pivot axis [44] [green].” Ex. 1017, [0008].

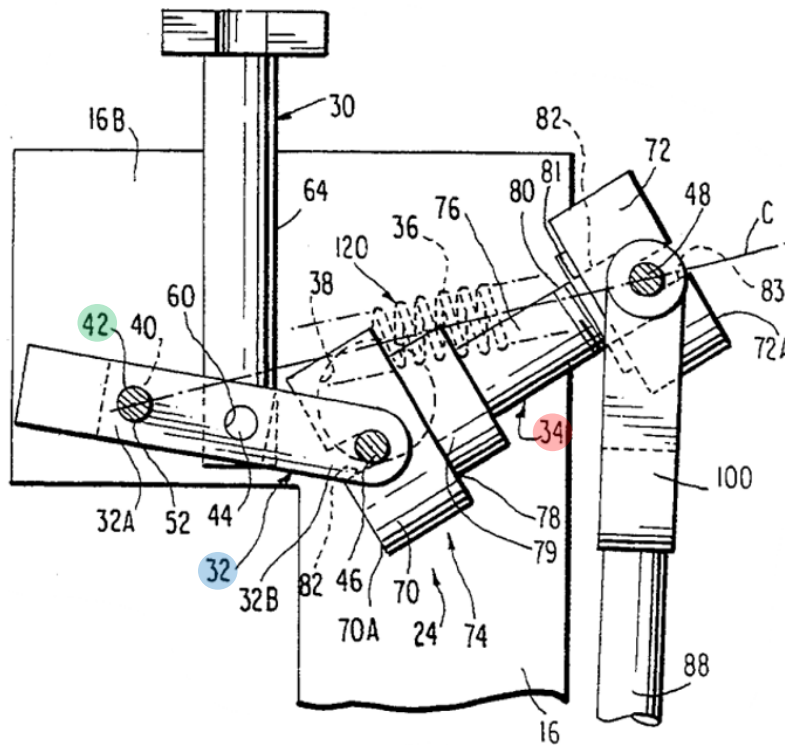


Id., Figs. 1A, 3 (color added). Simon further explains that “[t]he second mounting portion ... defines a second pivot axis spaced apart from the first pivot axis” and describes “pivoting a pivot member about the second pivot axis.” *Id.*, [0008]. A

POSITA would recognize Simon as another straightforward example of a multi-axis arrangement in which rotation about a primary pivot axis drives the displacement of connected components, even though distal portions of the linkage may undergo their own local rotations about a second, structurally distinct pivot axis.

11. The prevalence of this understanding within the field is further reflected in Francart (U.S. Patent No. 5,426,990; Ex. 1018). Francart describes “[a] toggle linkage over-center mechanism employ[ing] first and second solid, metal links [32 and 34] [blue and red] having facing axial ends pivoted to each other for pivoting about a first axis [defined by a second pin 46], the first link [32] is pivotably coupled at one end to the fixed support for pivoting about a second pivot axis [defined by a first pin 42] [green].” Ex. 1017 (abstract), 4:18-26. These structures are shown in the following figure:

FIG. 4



Id., Fig. 2 (color added). Francart's mechanism includes multiple pivot joints whose movements necessarily interact through the linkage. *Id.*, abstract. A POSITA would recognize this as another routine example of a multi-link assembly in which motion about one pivot axis occurs in coordination with motion about another. Thus, Francart reinforces the point that mechanical systems commonly incorporate compound or coordinated pivoting motions, and that a POSITA would not expect each component to rotate in isolation about a single axis or to mirror the exact angular trajectory of any other component for the overall motion to be understood as pivotal.

12. In my opinion, the independent claim requirement that “two joints ... define a pivotal axis of the pivotal mount for pivotal movement of the pivotal mount relative to the cap assembly base” addresses the linkage and motion of the pivotal mount, not a requirement that every point of a mouthpiece rigidly attached or coupled to that mount must exhibit pure rotational motion about the same axis. *See* Ex. 1001, claims 1, 7, 13. A POSITA would understand the claim phrase “mouthpiece ... for pivotal movement with the pivotal mount” to mean that the mouthpiece is coupled to the pivotal mount such that, when the pivotal mount pivots relative to the cap assembly base, the mouthpiece also moves with that pivot relative to the base. *See id.*; *see also id.*, 16:54-60. The claim language does not require the mouthpiece to mirror the pivotal mount’s kinematic path, to maintain a constant radius from the pivotal mount’s hinge axis, or to ensure that all local rotational components occur in a direction that never appears to move away from the pivotal mount’s rotation, contrary to CamelBak’s framing of the limitation (*see e.g.*, POR, 35-39; Ex. 2016, ¶¶64-73).

13. In addition, contrary to the assertions of CamelBak and Mr. Jobin (*see e.g.*, POR, 38-39; Ex. 2016, ¶¶74-88), nothing in the claims requires that the mouthpiece pivot in a manner that mirrors the rotational sense of the pivotal mount, or that the mouthpiece must avoid any local rotation that might appear to move away from the direction of the pivotal mount’s rotation about every axis. The claim phrase

“for pivotal movement with the pivotal mount” speaks to whether the mouthpiece engages in the pivotal mount’s pivot-driven movement relative to the cap assembly base, not to the direction of any secondary rotation the mouthpiece may exhibit about another joint. *See also* Ex. 2017 (explaining that “with” can be “used as a function word to indicate a participant in an action, transaction, or arrangement” or “used as a function word to indicate combination, accompaniment, presence, or addition”). This understanding is also consistent with the specification, which states that “any attached mouthpiece may be pivotally moved” with the pivotal mount. Ex. 1001, 16:54-60. A POSITA would recognize that the phrase “any attached mouthpiece” covers a wide range of attachment configurations, including rigid or multi-part assemblies whose local motion need not mirror the pivotal mount’s rotation in either direction or magnitude.

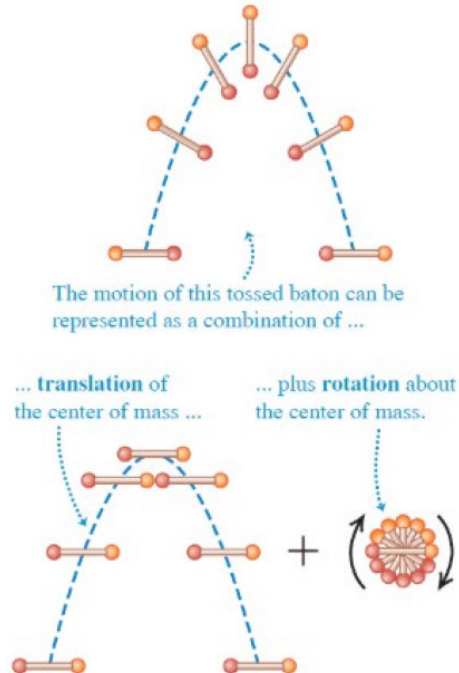
14. The prosecution history of the ’250 patent does not support CamelBak’s proposed “mirroring” or rigid-body rotation requirements. During prosecution, the Examiner rejected the claims over McDonough (Ex. 1009, 5-11 (discussing Ex. 1010)), and Patent Owner responded by amending the claims to require, among other things, that the mouthpiece be “coupled to a mount outlet of the pivotal mount” (Ex. 1009, 15-21). Patent Owner argued that McDonough does not teach that coupling requirement. *Id.*, 22-25. Patent Owner did not state that McDonough failed to disclose pivotal movement with the pivotal mount because of any requirement that

the mouthpiece rotate in a manner that mirrors the pivotal mount, or as a rigid body about a single axis. *See id.* 22-25. Although CamelBak and Mr. Jobin now cite statements from the re-examination of the parent application ('255 patent) (POR, 44-49; Ex. 2016, ¶¶83-86), those statements do not mandate the “mirroring” or single-axis constraints CamelBak asserts. Those statements are also not inconsistent with the plain meaning understanding I apply. *See* Ex. 1002, ¶¶76-85. In the '255 patent re-examination, McDonough's structure was distinguished on the ground that its dispensing element is not coupled to a pivotal mount and therefore does not move with a pivotal mount. Ex. 2002, 626, 634-39. Because McDonough lacks that coupling—added in the claim amendments—its dispensing element would not be expected to pivot, or specifically to pivot with a constant radius or in a manner that “mirrors” a pivotal mount. *Id.*, 634-639. A POSITA would understand that the applicant has consistently relied this structural deficiency to distinguish McDonough.

15. Compound-linkage mechanisms routinely include situations in which a distal component undergoes some local rotation opposite in direction to the rotation of the proximal hinge that drives the overall motion. *See e.g.*, Exs.1016-1018 (describing compound-linkage examples); *see also* ID, 27 n.11 (Board describing an example of the sun, earth, and moon). Mr. Jobin further acknowledged this principle in discussing the motion of a tossed baton, which simultaneously undergoes rotation

about its center of mass and a larger-scale motion of that center of mass along a curved path about an external point. *See* Ex. 2016, ¶109.

Figure 10.11 The motion of a rigid body is a combination of translational motion of the center of mass and rotation around the center of mass.



Ex. 2019, 308 (Fig. 10.11). Although the baton is a single rigid body—not a multi-link mechanism—the example confirms that multiple rotational components can coexist without one mirroring the other, and that the overall motion remains rotational with respect to each axis. *See e.g.*, Ex. 1013 (Jobin deposition transcript), 99:10-15 (“So this is describing a particular example where the baton is rotating about a center point, and the center of the baton is moving in this arc shape; correct? A. That’s correct. That’s what this is describing.”).

16. Indeed, Mr. Jobin acknowledged in his deposition that the baton can

simultaneously undergo two different rotations, which would include rotations in opposite directions about different axes, and that the resulting motion remains rotational with respect to each axis. *See* Ex. 1013 (Jobin deposition transcript), 108:22-109:8 (“Is it possible for the center of the rod to move rotationally, Mr. Jobin? A. I’m just thinking about what example would be -- I would say that the answer is yes. If there was -- if it was constrained to an axis in a way that the center point of the baton could move in a circle, the baton itself could also freely -- could also rotate about its axis of center of mass at the same time. Yeah, it could happen.”). He acknowledged that a body whose center is constrained to move in a circular path around an external point may also rotate about its own center of mass at the same time, even if the instantaneous sense of the local rotation differs from the larger-scale rotation about the external point. *Id.* These acknowledgements further confirm that nothing inherent in the concept of “pivotal movement” requires a component to rotate in the same direction as, or to mirror, the rotational sense of another component.

17. A POSITA would not consider such local differences in direction to mean that the distal component is not moving “with” the pivoting structure that governs its overall displacement. Indeed, as Mr. Jobin acknowledged in his deposition, two motions—such as local rotation and larger scale rotation or translation—can be combined to form the resulting overall motion of a component.

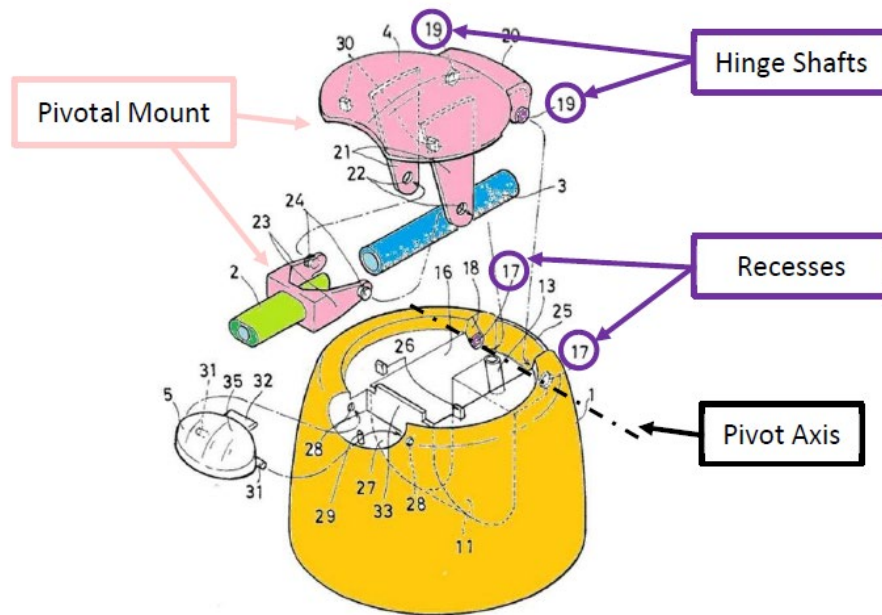
See Ex. 1013 (Jobin deposition transcript), 101:11-15 (“Q. So you would agree that two motions can be added together to form the resulting motion? A. Right. And, in this case, it’s a combination of translational motion and rotational motion. That’s the point I’m trying to make.”) (this exchange occurred while he was discussing the baton example in Ex. 2019). To read a “mirroring” or “not away from” requirement into the claims would impose a restriction that has no basis in the claim language, is inconsistent with the behavior of common multi-joint mechanical assemblies, and would exclude embodiments disclosed by the ’250 patent. Ex. 1001, 16:54-60, 18:42-46. In my opinion, a POSITA would understand “with” to refer to participation in the pivot-driven movement of the assembly as a whole, not to a requirement that every subcomponent rotate in a manner that mirrors the pivotal mount’s local instantaneous direction of rotation.

18. For these reasons, I do not understand the claim limitation “for pivotal movement with the pivotal mount” to impose the rigid-body, constant-radius, or mirroring constraints that Mr. Jobin derives from introductory physics textbooks, nor do I understand it to require that the mouthpiece pivot “not away from” the direction of rotation of the pivotal mount about every joint axis. *See* Ex. 2016, ¶¶69-70, 74-80. Mr. Jobin’s analysis relies on textbook discussions that separate motion into “pure translation” or “pure rotation” (*see id.*, ¶¶69-70), but those simplified classifications are not how POSITAs interpret mechanical descriptions in the field.

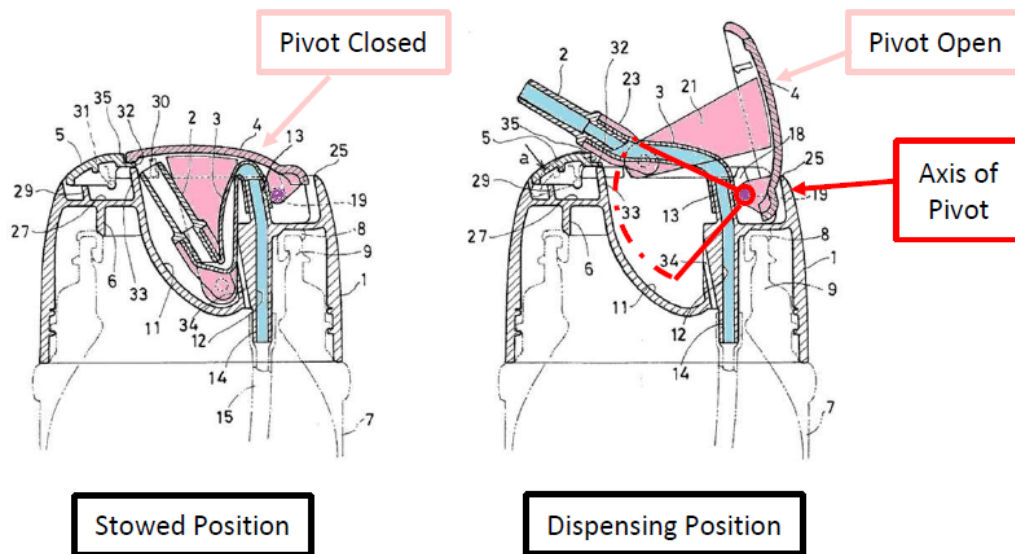
Likewise, a POSITA would not treat a local rotational component that appears to move away from the pivotal mount's direction of rotation as meaning that the mouthpiece is not moving "with" the pivot of the pivotal mount. Nothing in the intrinsic record suggests that patentee intended to incorporate such strict physics-textbook criteria, or to require the mouthpiece to mirror the pivotal mount's local rotational sense. Under the ordinary meaning, a POSITA would evaluate whether the mouthpiece's movement relative to the cap assembly base is produced by, and participates in, the pivotal movement of the pivotal mount about the pivotal axis. Neither constant-radius rigid-body rotation nor mirrored local direction is required.

II. OPERATION OF NAKAJIMA: PIVOTAL MOVEMENT WITH THE PIVOTAL MOUNT

19. Nakajima discloses a cap assembly in which the lid 4 is mounted to the cap assembly base by hinge shafts 19, and the mouthpiece assembly is carried by the lid 4. Ex. 1002, ¶¶72-75 (citing Ex. 1004, ¶¶3-4, 16 and Figs. 1-3).



Ex. 1002, ¶74 (annotating Ex. 1004, Fig. 1). As the lid 4 pivots between the closed position and an open, dispensing position, the mouthpiece assembly—including the component I identified as the claimed mouthpiece (green) (Ex. 1002, ¶¶81)—moves from a stowed, lowered position to a raised position suitable for drinking. Ex. 1004, ¶3, Figs. 2-3. From the perspective of a POSITA, the overall motion of that mouthpiece relative to the cap assembly base is a pivoting movement produced by the rotation of the lid 4 about its hinge shafts 19, regardless of whether additional joints in the linkage (e.g., rotation at arms 23) produce local rotation or flexing of the mouthpiece assembly itself.



Ex. 1002, ¶73 (annotating Ex. 1004, Figs. 2-3).

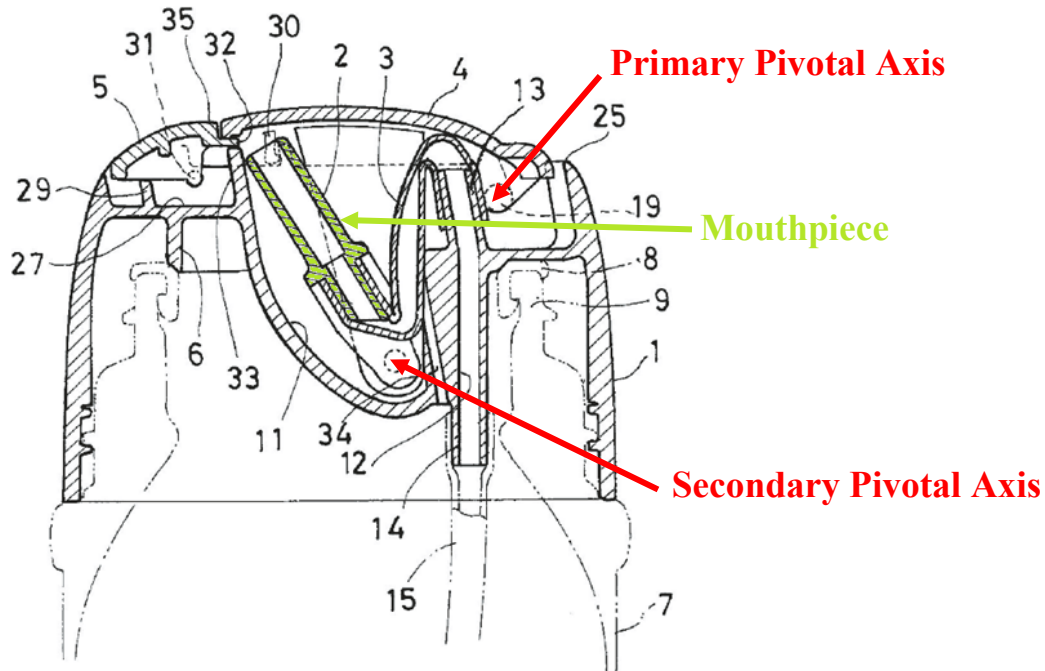
20. CamelBak and Mr. Jobin characterize Nakajima’s mouthpiece as moving only “up and down” and state that it does not exhibit pure rotational motion about the hinge shafts. POR, 58; Ex. 2016, ¶107. In my opinion, that is not an accurate description of the kinematics shown in Nakajima. The phrase “moves up and down” in the Nakajima’s text is a non-technical description of the lid 4’s general opening and closing motion, not a technical statement that the mouthpiece undergoes pure linear translation. When the lid 4 rotates about the hinge shafts 19, the mouthpiece carried by the lid 4 will trace a curved path relative to the cap assembly base. See Ex. 1001, 16:54-60. A POSITA reviewing Nakajima’s description and figures together would understand the mouthpiece to follow an arcuate path as the lid 4 opens and closes, not a straight-line translation relative to the cap assembly

base. That the pivotal mount structure also includes other joints—such as the arms 23 which further pivot about protrusions—does not negate that its overall movement with respect to the cap assembly base is produced by, and includes, pivoting with the lid 4 about the hinge shafts 19. This understanding is also consistent with CamelBak’s own Exhibit 2020, which explains that a very small segment of a rotational path—particularly with a large radius—may appear linear at a glance. Ex. 2020, 3 (disclosing “[e]ven the tiniest slice of the path of an object in rotational motion around a very distant axis—which would look like a straight line at a glance—represents circular motion”).

21. A POSITA would further recognize that this overall pivoting motion results from the combined effect of two distinct rotational components within Nakajima’s linkage. Nakajima describes the mouthpiece as moving under the influence of both the primary rotation at shafts 19 and a secondary rotation at arms 23. Ex. 1004, ¶¶3, 16. In engineering terms, this means that the movement of Nakajima’s mouthpiece is governed by pivotal motion about two axes: a primary pivotal axis (corresponding to rotation of the hinge shafts 19 within the shaft-receiving recesses 17) and a secondary pivotal axis (corresponding to rotation of the mouthpiece at the arms 23 within the holes 22). *See also id.*, Ex. 2018 (Vallee deposition transcript), 111:14-112:14, 119:1-19, 125:3-126:17. To illustrate how these axes contribute to the mouthpiece’s overall motion, I present below a series of

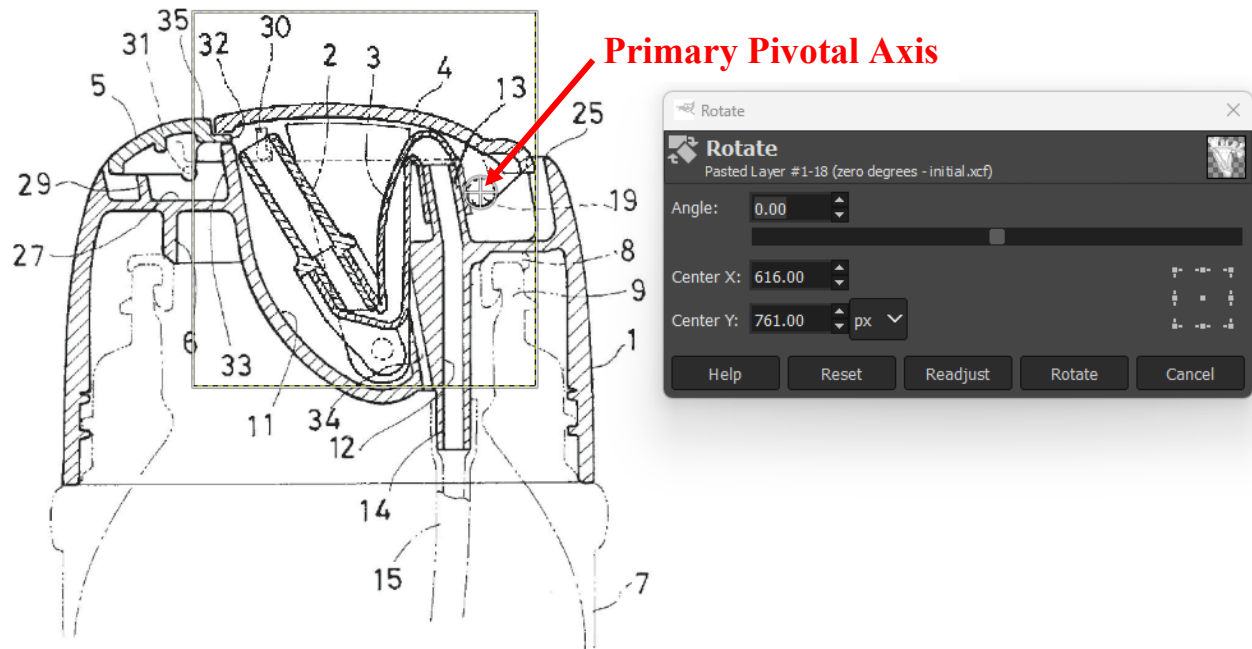
modified versions of Nakajima's Figure 2.

[Fig. 2]



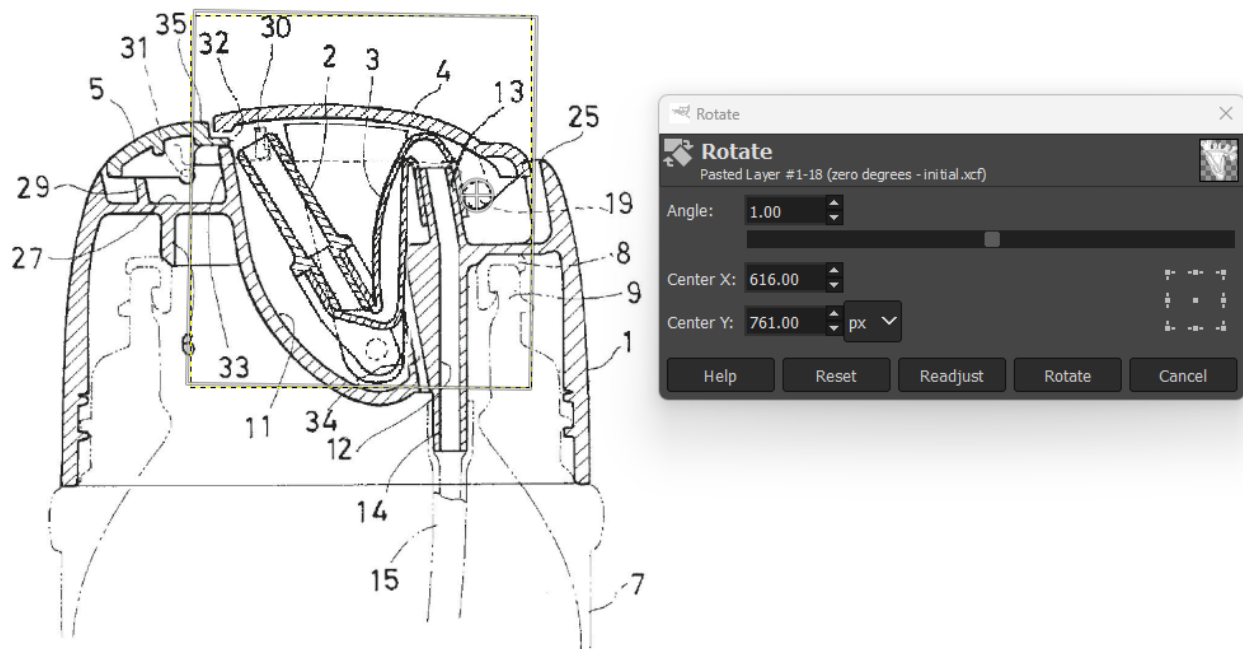
Ex. 1004, Fig. 2 (color added). These illustrations separately demonstrate (1) the component of the mouthpiece's movement attributable solely to rotation about the primary pivotal axis, and (2) the additional component of movement attributable to rotation about the secondary pivotal axis. Showing these components sequentially provides a depiction of how the combined rotations about both the primary and secondary pivotal axes together govern the mouthpiece's full pivotal movement.

22. In the figure below, I performed a freeform selection of Nakajima's lid, pivotal mount, and mouthpiece and applied a software-based rotation element at the primary pivotal axis.



As shown in this figure—which includes a screenshot from the image editor software GNU Image Manipulation Program (GIMP)—the software-based rotation element is placed at the same axis that I previously identified and mapped to the claimed pivotal axis of independent claim 1 (*see* Ex. 1002, ¶74). Using this setup, I will illustrate the rotation of the freeform-selected structure (Nakajima’s lid, pivotal mount, and mouthpiece) about this primary pivotal axis through pivots of up to 70° clockwise.

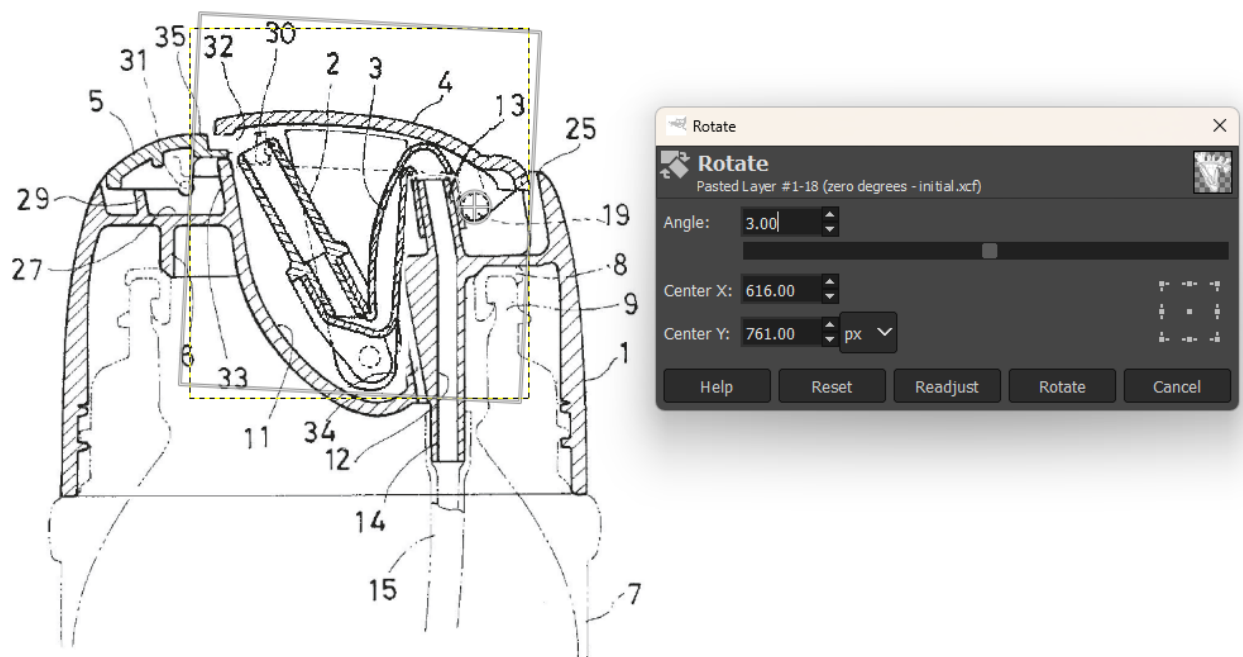
23. The next figure shows the freeform-selected structure (Nakajima’s lid, pivotal mount, and mouthpiece) rotated by 1° clockwise about the primary pivotal axis:



This incremental rotation isolates the initial component of the mouthpiece's movement attributable solely to rotation about the primary pivotal axis.

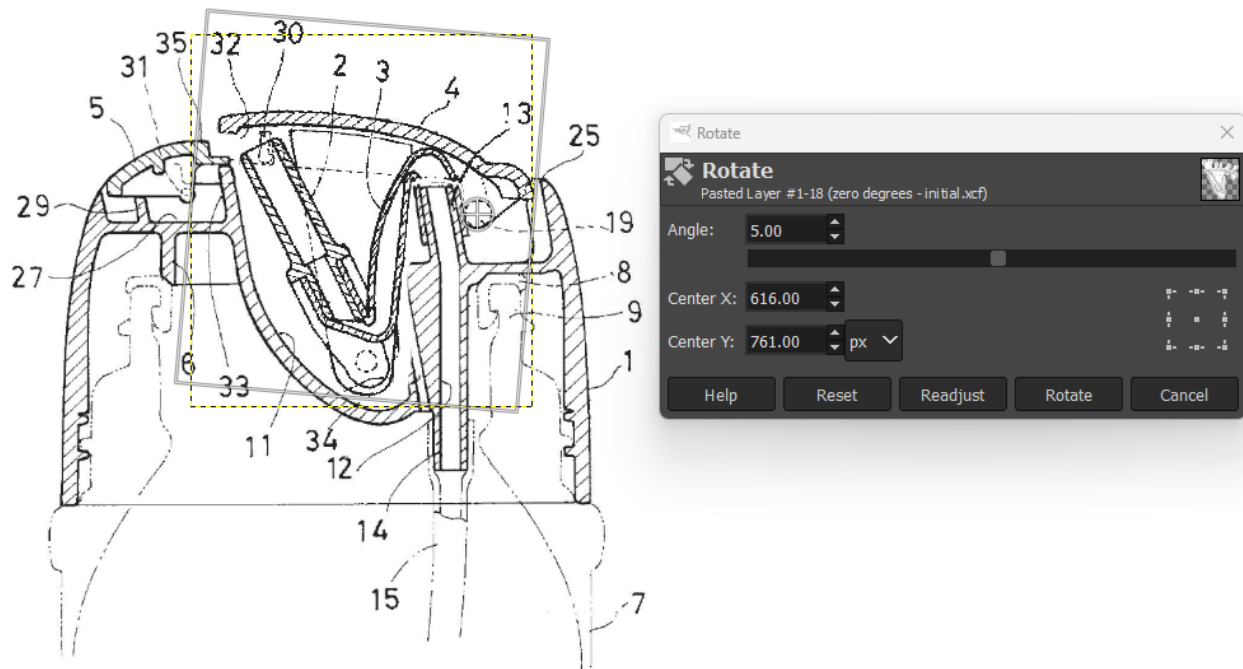
24. The following figure shows the freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) rotated by 3° clockwise about the primary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



This further rotation continues to illustrate the mouthpiece's movement resulting exclusively from rotation about the primary pivotal axis.

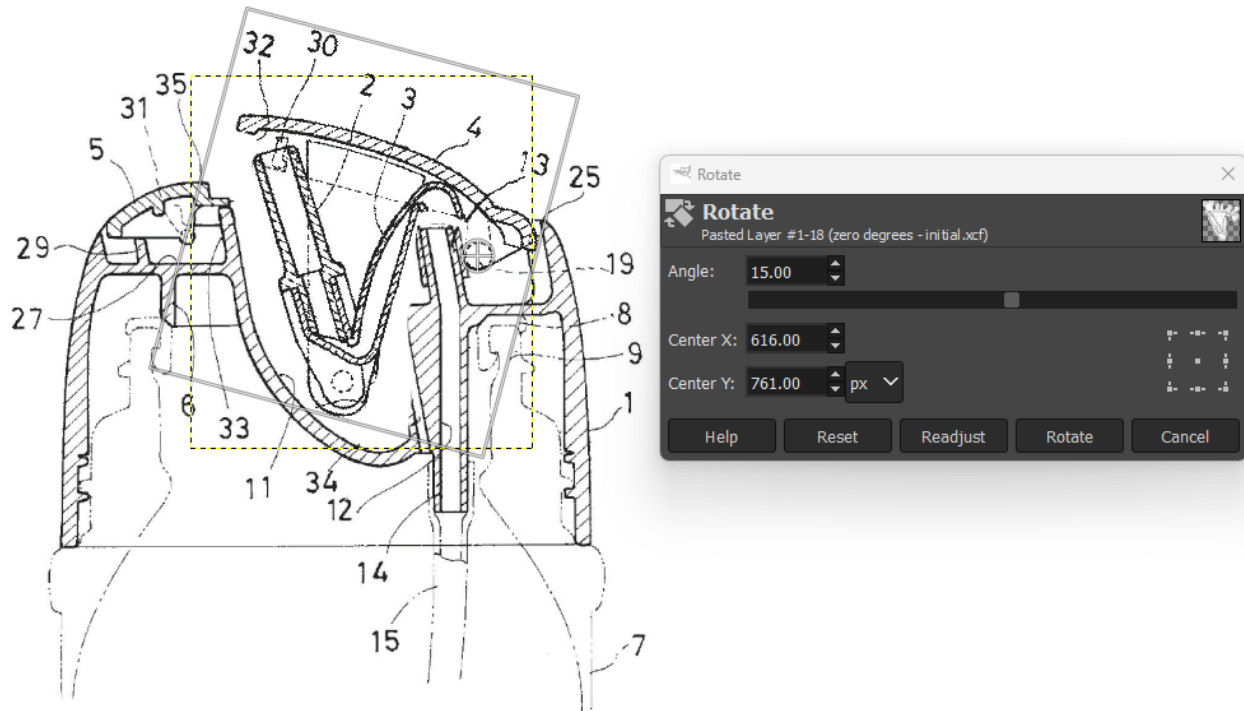
25. The following figure shows the freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) rotated by 5° clockwise about the primary pivotal axis:



These preceding three figures illustrate that, during the initial opening of Nakajima's lid 4, the movement of the mouthpiece is governed predominantly by rotation about the primary pivotal axis. At this early stage, the mouthpiece remains closely constrained within the storage recess 11 and moves as a near-rigid extension of the lid 4, having little opportunity to rotate independently about the secondary pivotal axis. For small initial rotations of the lid 4, the resulting motion of the mouthpiece closely follows a circular arc centered on the primary pivotal axis. To a POSITA, the path over this initial portion of the motion would be understood as constant-radius pivotal movements about the primary pivotal axis, even if a small amount of secondary-axis rotation were present.

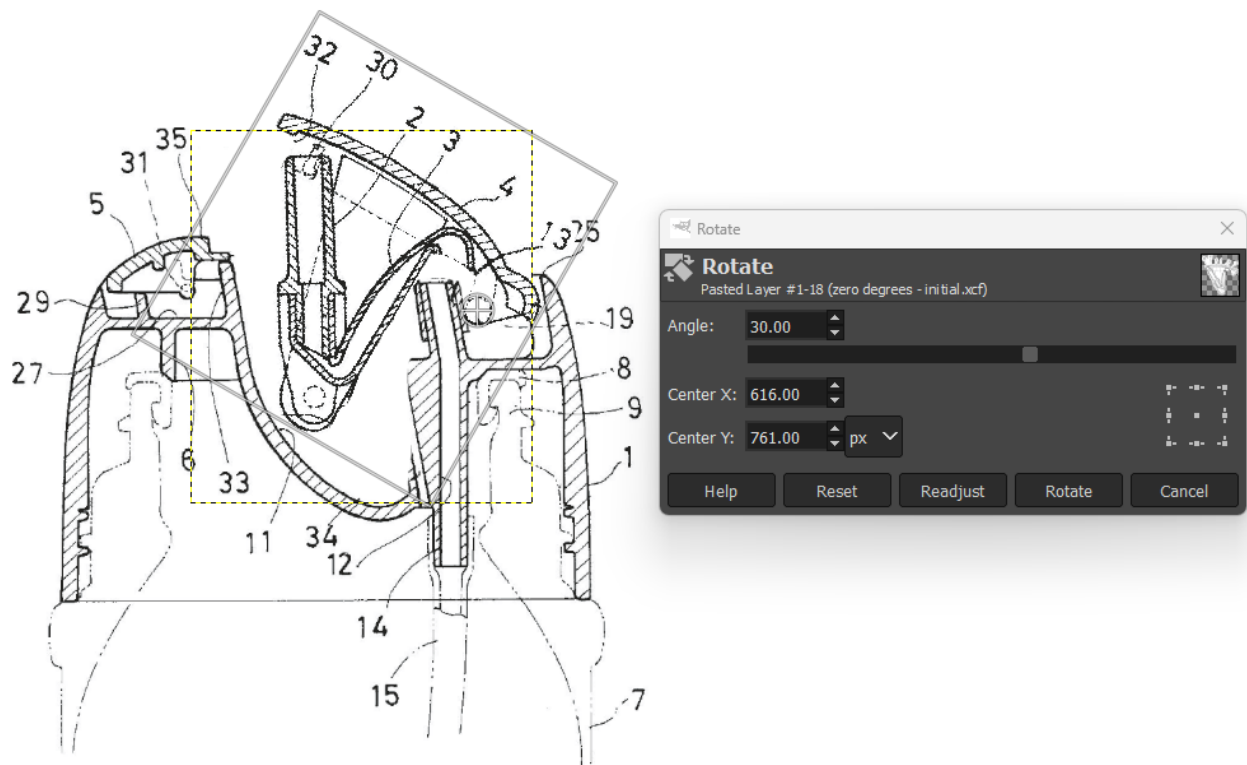
26. The next figure shows the freeform-selected structure (Nakajima's lid,

pivotal mount, and mouthpiece) rotated by 15° clockwise about the primary pivotal axis:

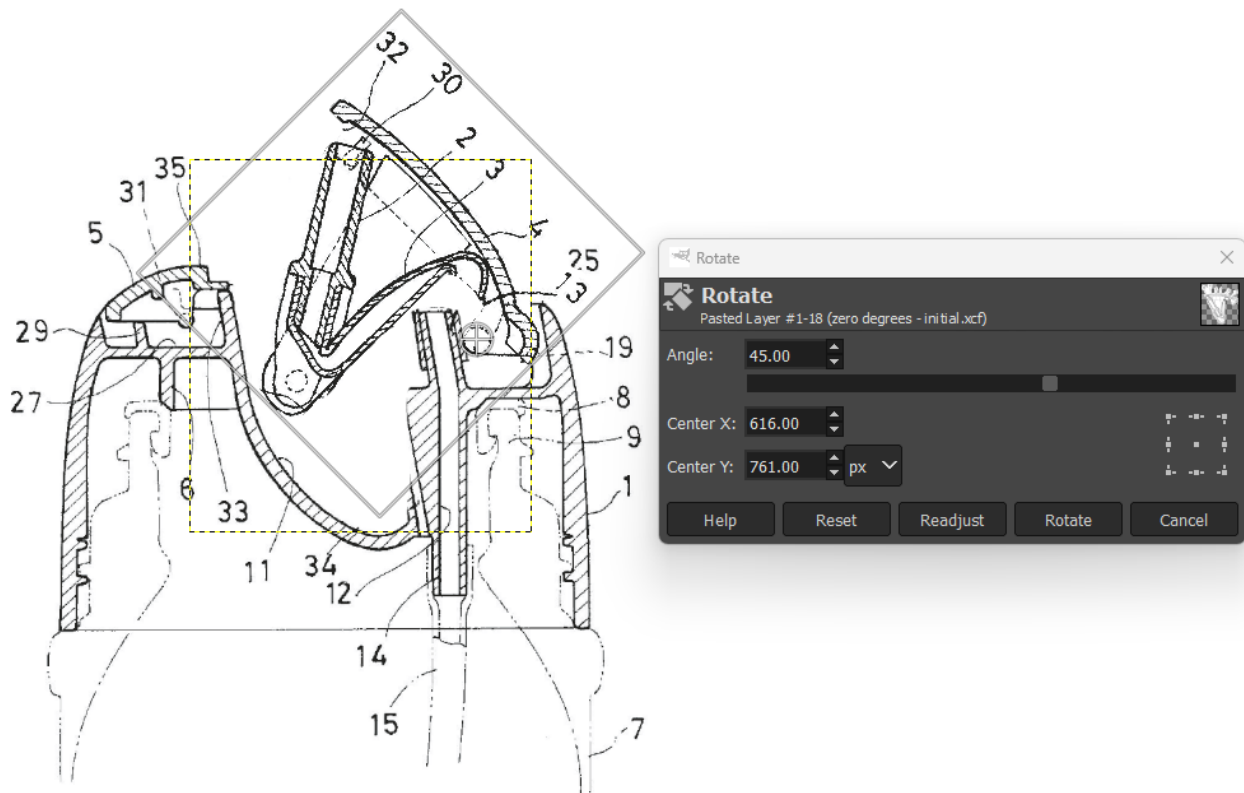


27. The following figure shows the freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) rotated by 30° clockwise about the primary pivotal axis:

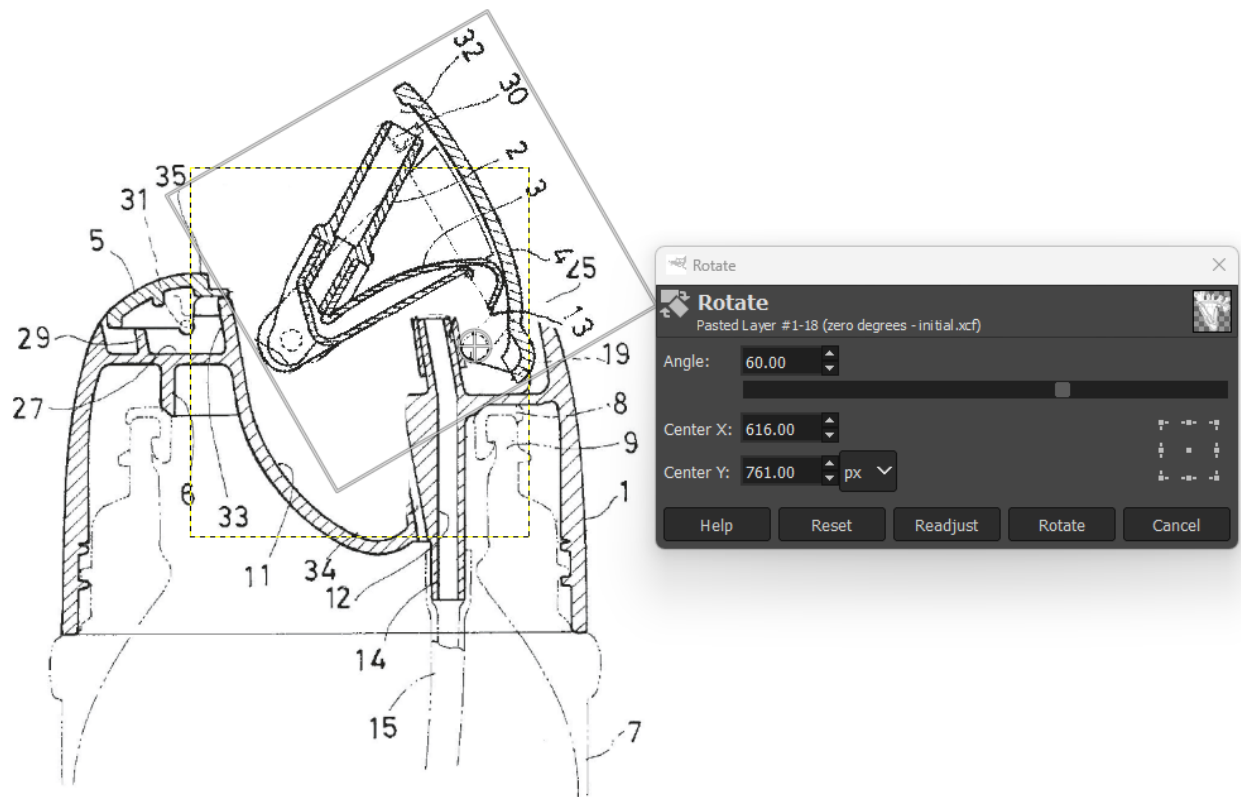
Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



28. The subsequent figure shows the freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) rotated by 45° clockwise about the primary pivotal axis:

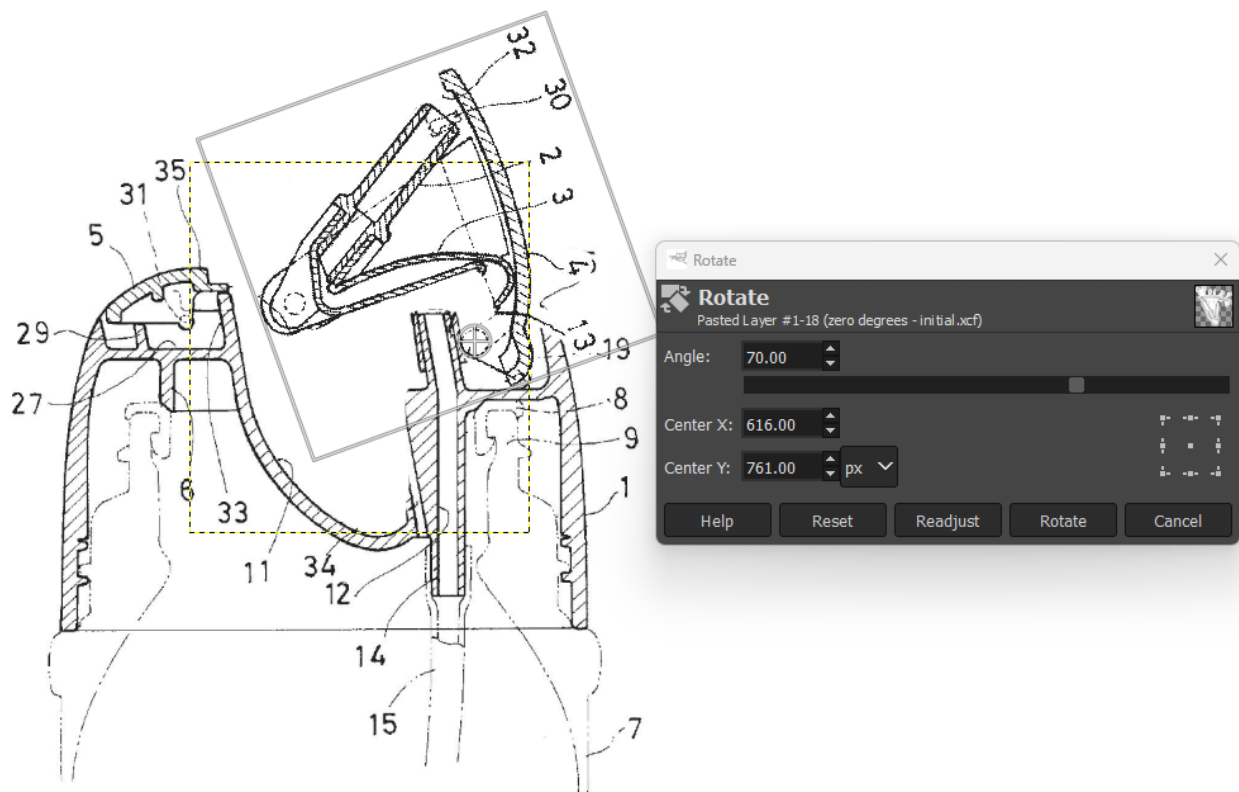


29. The next figure shows the freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) rotated by 60° clockwise about the primary pivotal axis:



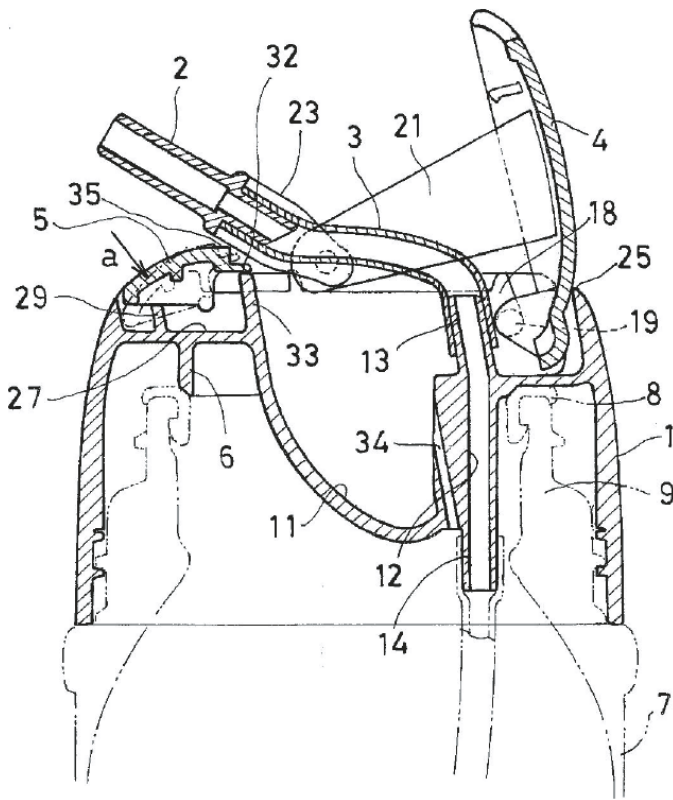
30. The following figure shows the freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) rotated by 70° clockwise about the primary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



The preceding figure represents a lid-open position that is comparable to the position shown in Figure 3 of Nakajima, which depicts the lid 4 opened to a similar extent:

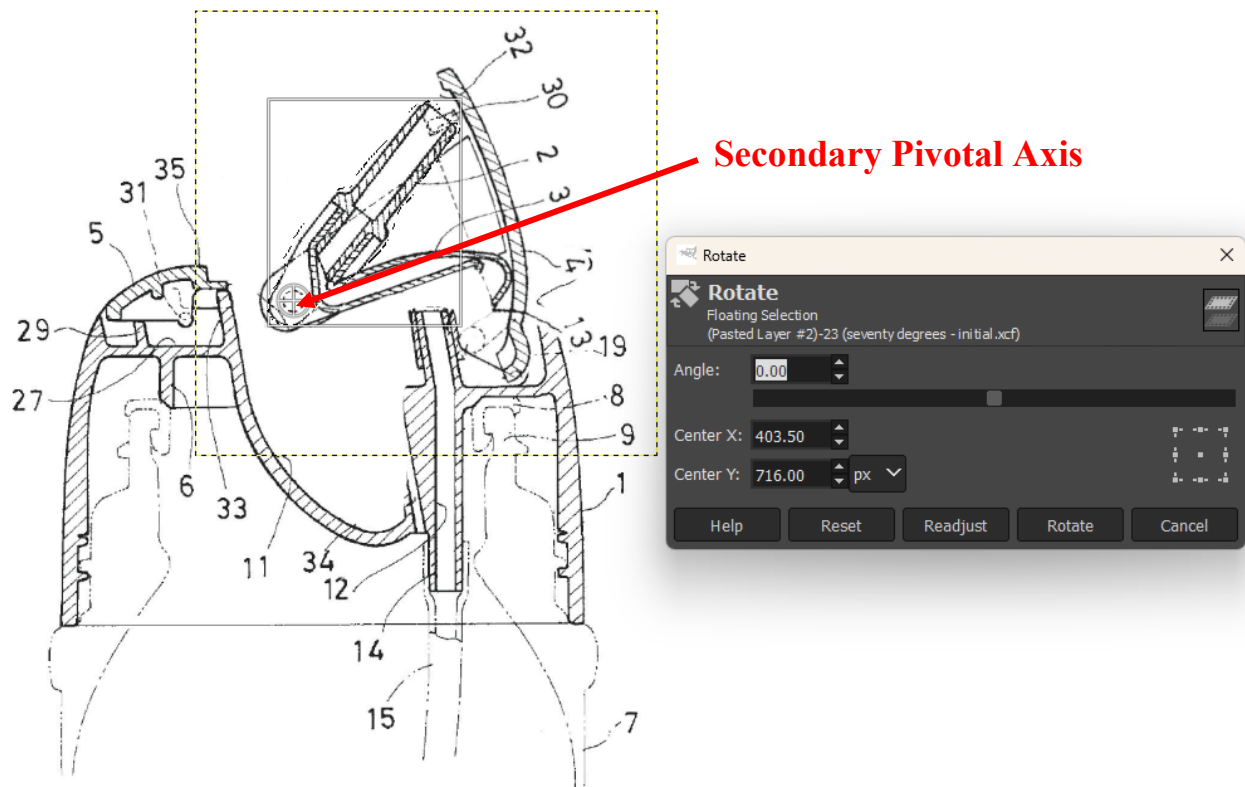
[Fig. 3]



Ex. 1004, Fig. 3.

31. Having illustrated the component of Nakajima's mouthpiece movement attributable solely to rotation about the primary pivotal axis, I now isolate and illustrate the additional movement component resulting from rotation about the secondary pivotal axis. In the following figure, I performed a second freeform selection—this time isolating Nakajima's mouthpiece and arms 23—from the configuration shown in the preceding figure, in which the first freeform-selected structure (Nakajima's lid, pivotal mount, and mouthpiece) had been rotated by 70° clockwise about the primary pivotal axis. I then placed a second software-based

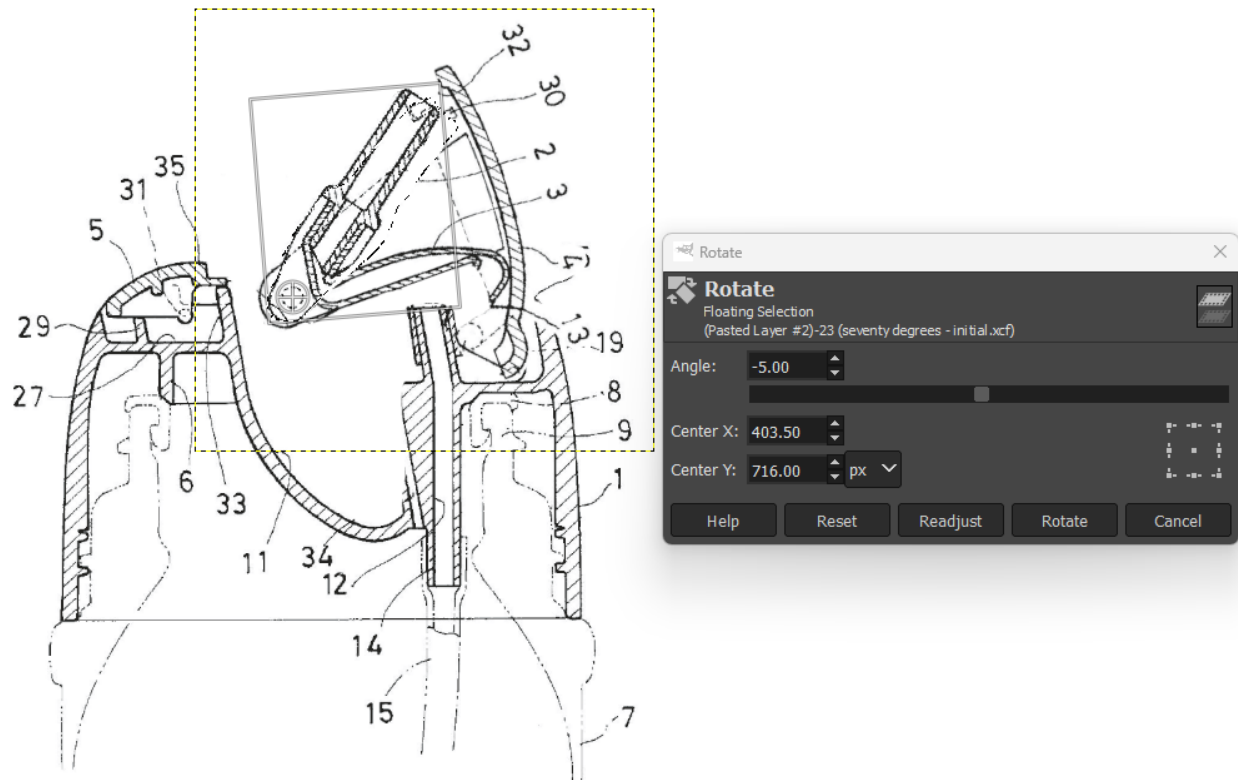
rotation element at the secondary pivotal axis.



This setup allows the mouthpiece, now independently selected, to be rotated about the secondary pivotal axis while the previously rotated structure remains fixed. With GIMP, I will illustrate rotation of this second freeform-selected structure (Nakajima's mouthpiece and arms 23) about the secondary pivotal axis through counterclockwise rotations of up to 90°.

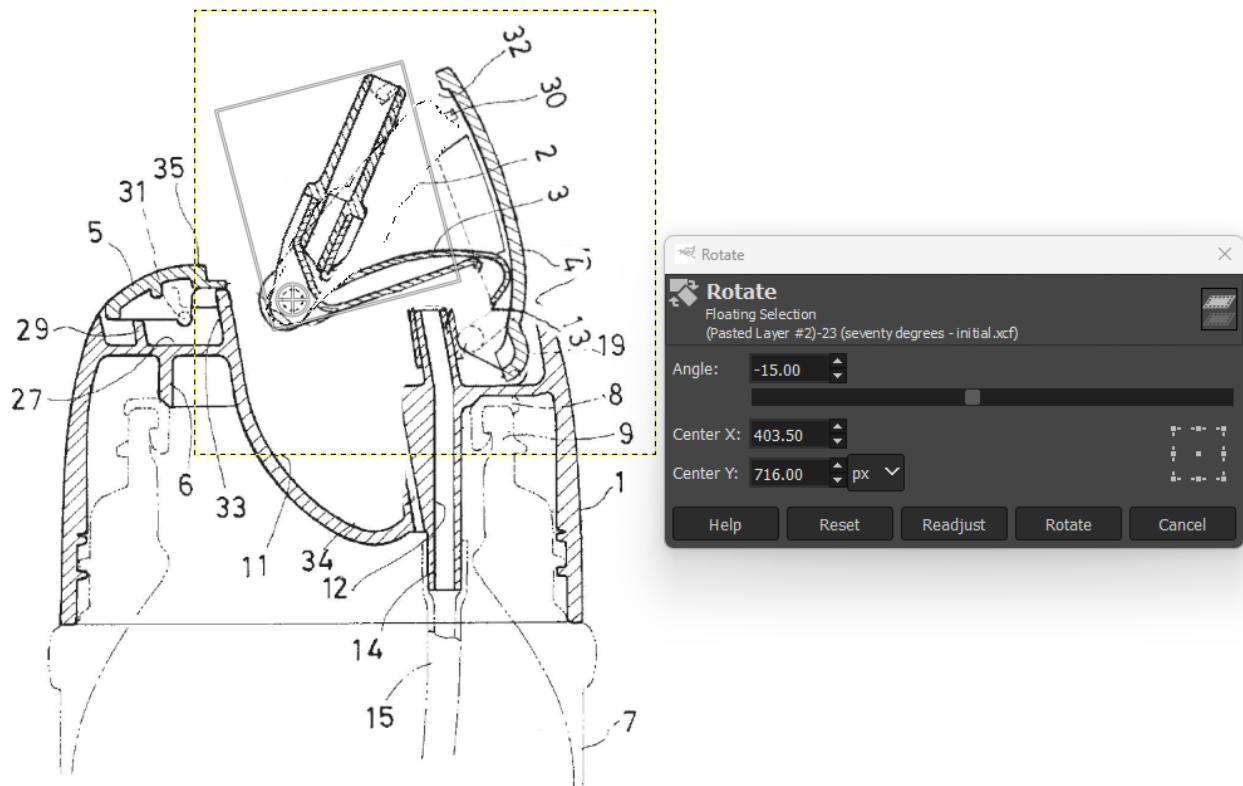
32. The next figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 5° counterclockwise about the secondary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



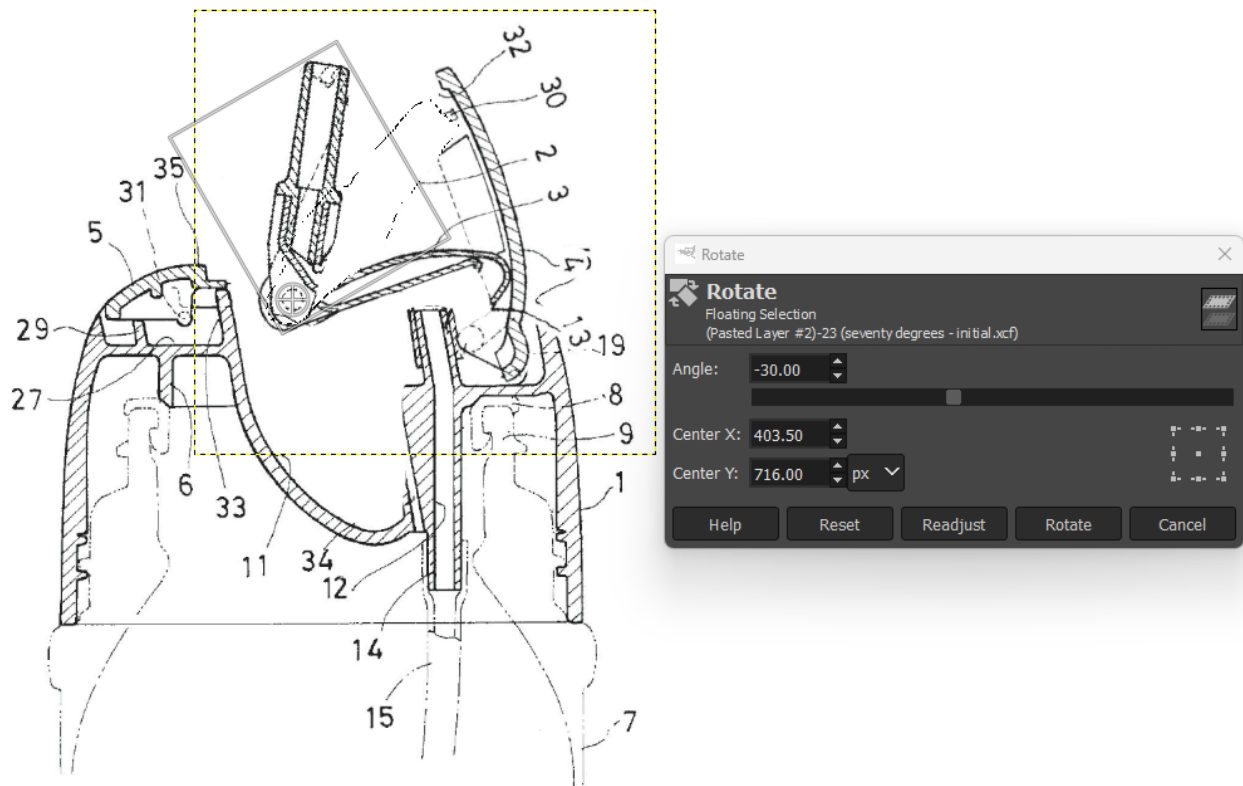
33. The following figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 15° counterclockwise about the secondary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140

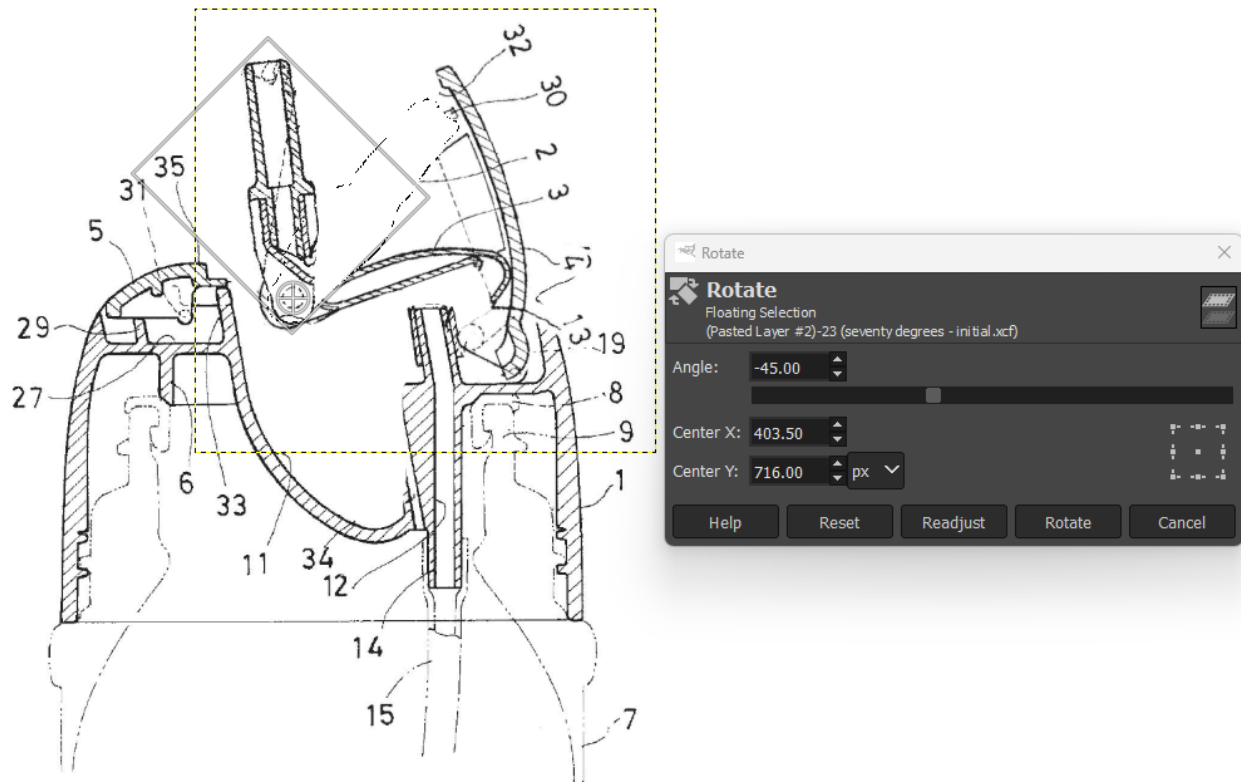


34. The subsequent figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 30° counterclockwise about the secondary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140

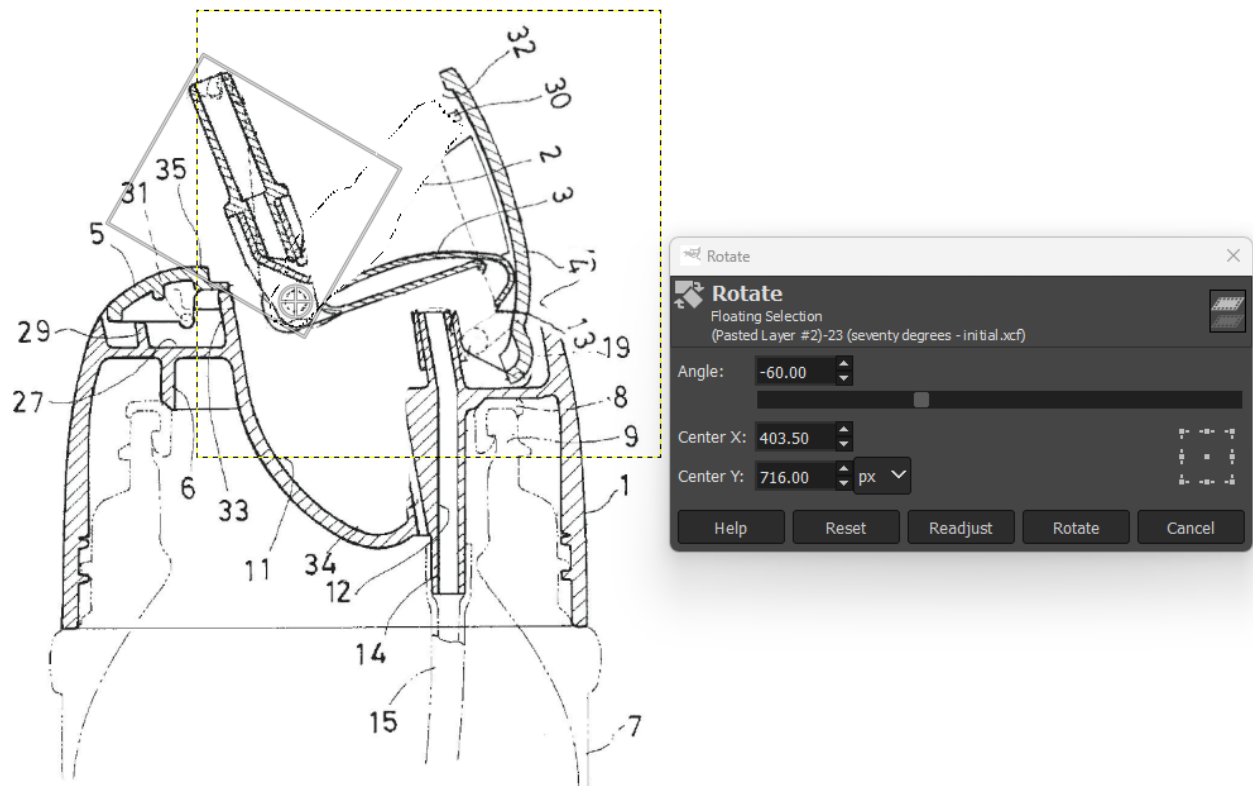


35. The next figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 45° counterclockwise about the secondary pivotal axis:



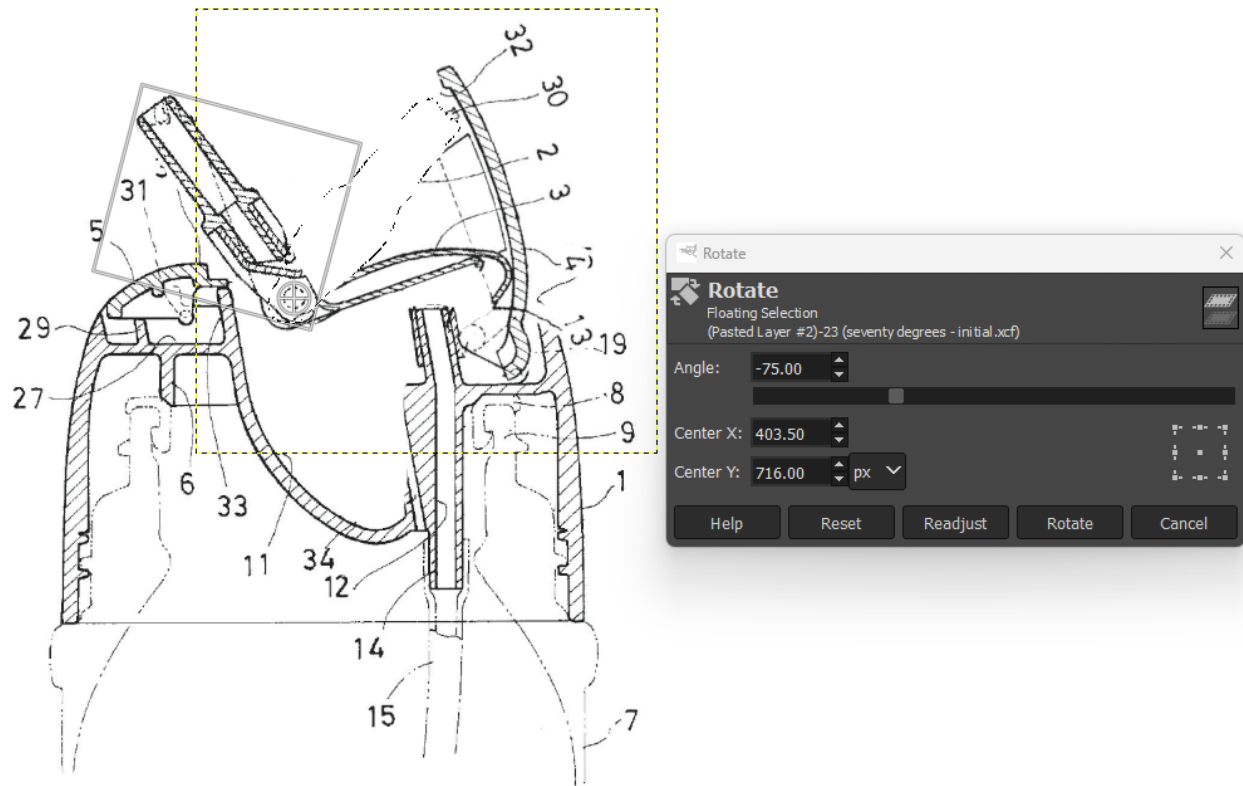
36. The following figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 60° counterclockwise about the secondary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



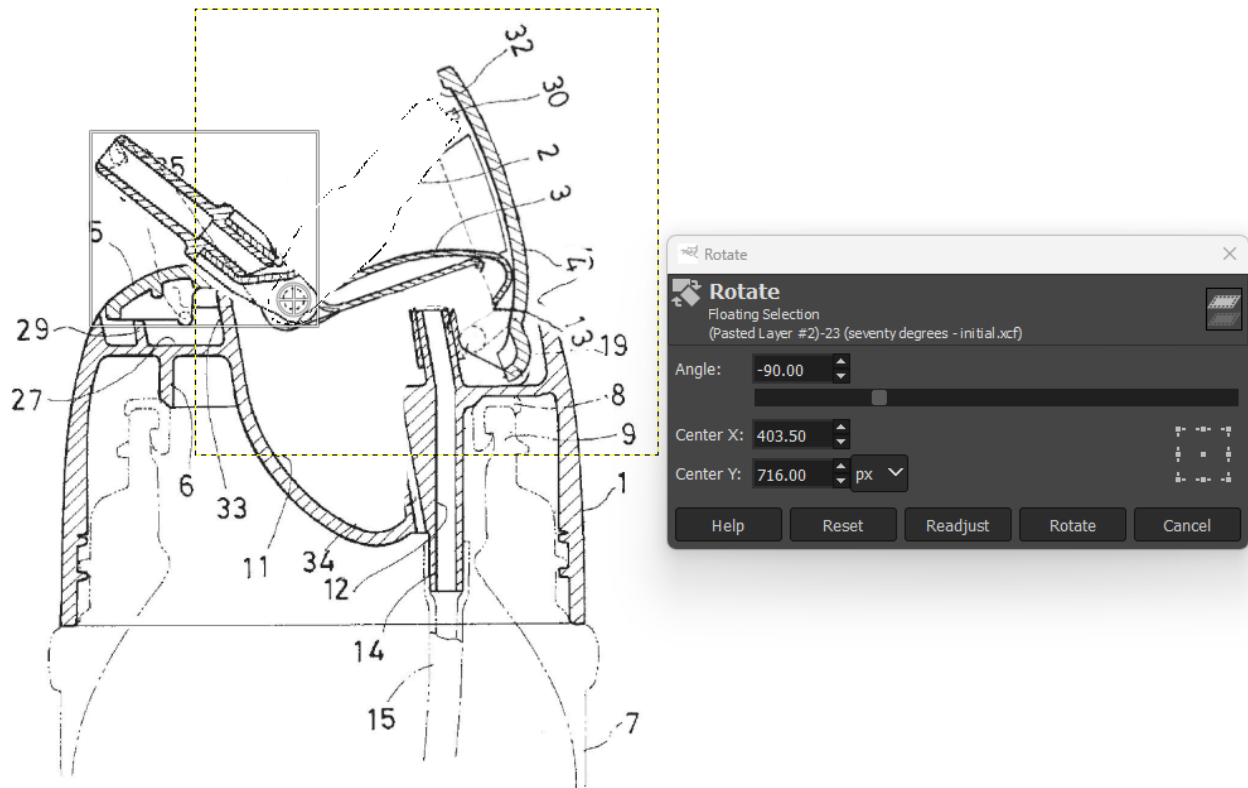
37. The subsequent figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 75° counterclockwise about the secondary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



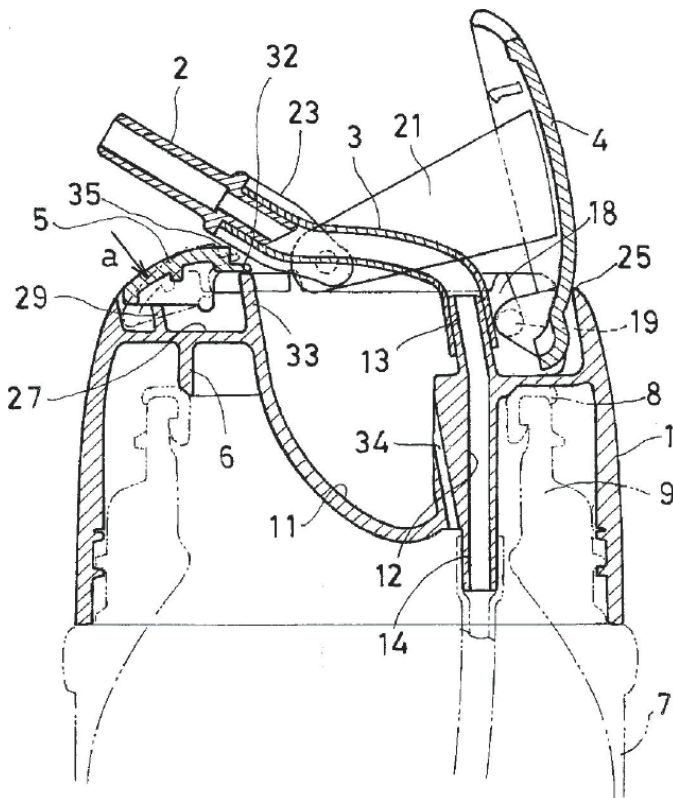
38. The next figure shows the second freeform-selected structure (Nakajima's mouthpiece and arms 23) rotated by 90° counterclockwise about the secondary pivotal axis:

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140



The preceding figure represents a mouthpiece orientation comparable to that shown in Figure 3 from Nakajima, in which the lid 4 is fully open and the mouthpiece is directed away from the lid 4 to a similar extent:

[Fig. 3]



Ex. 1004, Fig. 3. These series of figures demonstrate my understanding that the movement of Nakajima's mouthpiece between the positions shown in Figures 2 and 3 is governed by two distinct rotational components: (1) a primary rotational movement of the lid, pivotal mount, and mouthpiece about the primary pivotal axis of approximately 70° clockwise, and (2) a secondary rotational movement of the mouthpiece alone about the secondary pivotal axis of approximately 90° counterclockwise. Together, these two rotations form the compound motion of the mouthpiece described in Nakajima.

39. Although Figures 2 and 3 help illustrate this motion, my conclusion

does not depend on the drawings being to scale or depicting exact geometric proportions. Nakajima discloses that its mouthpiece is coupled to the lid 4 via two rigid linkages connected by a pivot joint, and that the lid 4 itself rotates about hinge shafts 19. *See* Ex. 1002, ¶¶72-81, 84-85; Ex. 1004, ¶¶3-4, 16. A POSITA would understand that, regardless of the precise dimensions shown in the figures, this configuration causes the mouthpiece to undergo the same pivot-driven rotation with the lid 4 about the primary pivotal axis, combined with additional local rotation about the secondary pivotal axis. The compound motion I describe follows from the mechanical structure Nakajima discloses, not from any assumed scale or alignment in the drawings.

40. Because the challenged claims of the '250 patent do not preclude more complex movement—including motion that results from combined rotation about a primary pivotal axis and a secondary pivotal axis—Nakajima's mouthpiece satisfies the claimed requirement of pivotal movement with the claimed pivotal mount about the claimed pivotal axis, as I explained in my first declaration. *See* Ex. 1001, claims 1-18; Ex. 1002, ¶¶80-81, 84-85. As shown in my preceding analysis, Nakajima's mouthpiece rotates approximately 70° clockwise together with the pivotal mount about the primary pivotal axis between the positions shown in Figures 2 and 3, thereby meeting the claimed pivotal movement.

41. The additional rotation of Nakajima's mouthpiece about the secondary

pivotal axis does not negate, alter, or diminish the fact that the mouthpiece undergoes the claimed pivotal movement about the primary pivotal axis. *See also e.g.*, Ex. 1013 (Jobin deposition transcript), 100:19-101:15 (“Q. So you would agree that two motions can be added together to form the resulting motion? A. Right. And, in this case, it’s a combination of translational motion and rotational motion. That’s the point I’m trying to make.”). Rather, the secondary-axis rotation simply adds an additional component of motion to the overall movement of the mouthpiece. The claims do not require that the mouthpiece moves with the pivotal mount *only* about the claimed pivotal axis, nor do they exclude structures that exhibit compound or multi-axis motion. Accordingly, the presence of secondary-axis rotation in Nakajima is consistent with—and does not preclude satisfaction of—the claimed pivotal movement about the claimed pivotal axis.

42. To the extent that my prior testimony acknowledged that the identified mouthpiece in Nakajima does not exhibit idealized “pure rotation” as defined in physics textbooks (i.e., every point of a rigid body moving on a circle of constant radius about a fixed axis) (POR, 56-57 (citing Exs. 2012, 2013)), that observation is consistent with my opinion here. The claims do not require rigid-body rotation, and a POSITA would not read the term “pivotal movement with the pivotal mount” to exclude mechanisms where a mouthpiece, carried by a hinged lid, moves in a compound motion that includes pivoting relative to the cap assembly base. *See* Ex.

1001, 16:54-60. Accordingly, in my opinion, Nakajima describes a mouthpiece that has pivotal movement with the pivotal mount relative to the cap assembly base.

43. Even if CamelBak’s proposed construction of “pivotal movement with the pivotal mount”—requiring that the mouthpiece undergo rotational motion about the same pivotal axis and in the same direction as the pivotal mount with a substantially constant radius—were adopted, Nakajima would still satisfy the limitation. As I explained in this section, when the lid 4 in Nakajima begins to open from the closed position, the mouthpiece assembly initially moves as a near-rigid extension of the lid 4 about the hinge shafts 19 before any appreciable relative motion occurs at the secondary joint. A POSITA analyzing that initial opening phase would recognize that points on the mouthpiece located near the arms 23 and along the portion of the structure carried by the lid trace an arcuate path about the hinge axis, with the same sense of rotation as the lid 4, mirroring the lid 4’s pivotal motion and with a radius that is effectively constant over the small angular displacements used to transition from the stowed to the drinking position. In other words, the mouthpiece exhibits the constant-radius, same-direction rotational motion about the hinge axis that CamelBak’s construction demands, during the very motion that moves the mouthpiece between the positions relevant to the claims. Accordingly, even under CamelBak’s more restrictive formulation, a POSITA would conclude that Nakajima discloses a mouthpiece having pivotal movement with the pivotal

mount relative to the cap assembly base.

III. A POSITA'S UNDERSTANDING OF "MOUTHPIECE"

44. In my first declaration in this IPR, I applied the plain and ordinary meaning of the term "mouthpiece." Ex. 1002, ¶¶13, 38; Ex. 1001, claims 1, 7, 13. My understanding of that plain and ordinary meaning remains the same. In light of the statements in the Patent Owner's Response (Paper 19) and Mr. Jobin's POR declaration (Ex. 2016) and the additional context provided by the Board's preliminary construction (Paper 14) and another CamelBak patent (Ex. 1014), I provide the following clarification of what a POSITA would understand that plain and ordinary meaning to encompass.

45. A POSITA would understand a "mouthpiece" to refer to the portion of a dispensing structure that forms the user-facing end of the fluid flow path and is positioned at the drinking interface—i.e., the part that the user places at or near the mouth when consuming fluid. *See, e.g.*, Ex. 2005, 1 (defining mouthpiece as "something placed at or forming a mouth"); Ex. 1001, claims 1 (19:12-14, 19:30-31), 7 (20:27-29, 20:43-44), 13 (21:42-44, 21:58-59). In this field, a mouthpiece need not be a large protruding spout; it may consist of a small outlet structure, a short tube end, or an aperture-forming component that defines the dispensing opening. The key technical feature is that the component is configured to serve as the terminal delivery structure for fluid intake and is intended to be approached by the user's

mouth during use, regardless of whether any surrounding structural features encase it. This understanding is consistent with Mr. Jobin's deposition testimony that a POSITA would understand a mouthpiece as "a piece that's inserted into the mouth." Ex. 1013 (Jobin deposition transcript), 27:6-20; *see also* POR, 28 ("'mouthpiece'—a compound of 'mouth' and 'piece'—is a piece (or part) that goes in the mouth").

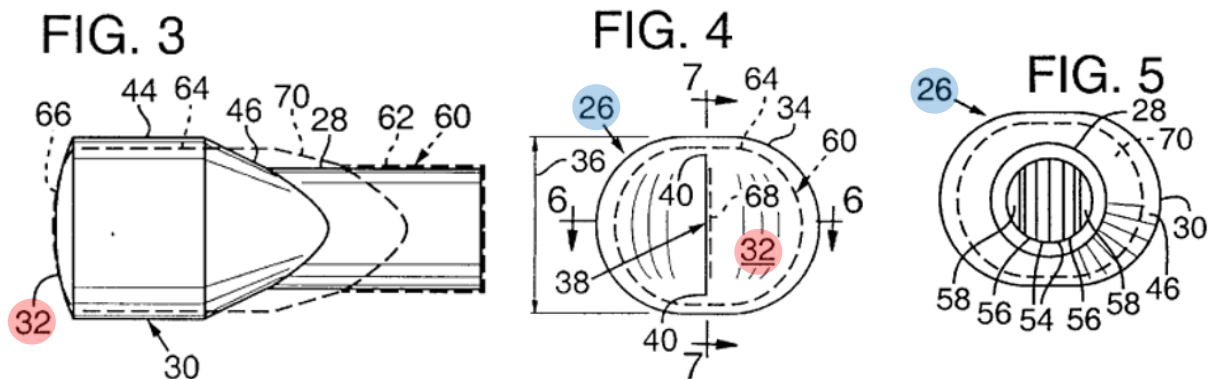
46. This understanding is further consistent with the Board's construction of "mouthpiece" in the Institution Decision as "a part (as of an instrument) that goes in the mouth or to which the mouth is applied." ID, 12 (citing Ex. 2005). A POSITA would not interpret that language to require direct mouth contact with the component. Rather, the Board's wording reflects the practical, user-oriented nature of mouthpiece structures in fluid-dispensing products, where the relevant component is the outlet region that the user places at, near, or in the mouth to drink (for example, by sipping, sucking, pouring, or otherwise drawing fluid from the outlet). Thus, the ordinary engineering understanding of "mouthpiece" encompasses and helps explain the Board's articulation of the term.

47. This understanding is also consistent with how the '250 patent uses the term "mouthpiece." To begin with, the '250 patent identifies portions of the mouthpiece that come into contact with the mouth, explaining that "[t]he sidewalls, or wall structure, 92 of the mouthpiece may be described as including one or more bite regions 112, which refer to opposed regions upon which a user may bite or

otherwise apply compressive forces to urge the mouthpiece from its closed configuration to a dispensing configuration.” Ex. 1001, 8:27-32. The specification makes clear that the mouthpiece is not limited to surfaces contacted by the mouth: it expressly discloses internal component that do not contact the user’s mouth, such as an “internal chamber 110 of the mouthpiece.” *Id.*, 9:36-39.

48. In addition, the ’250 patent explains that “the mouthpiece includes a dispensing outlet, or opening, 86.” Ex. 1001, 8:12-16. The ’250 patent further incorporates by reference U.S. Patent 6,032,831 (“Gardner”)¹, which I understand makes Gardner is part of the ’250 patent’s disclosure. Gardner describes a “[m]outhpiece 26 [as] includ[ing] a head 30, which typically is of larger cross-section than neck 28 and which *includes a dispensing face 32* through which fluid is selectively dispensed from the mouthpiece.” Ex. 1014, 3:38-41 (emphasis added). This mouthpiece 26 (blue) and its dispensing face 32 (red) is shown in the following figures:

¹ The first named inventor of the ’250 patent, Robert Choi, is also a co-inventor of Gardner.



Ex. 1014, Figs. 3 (mouthpiece side elevation view), 4 (mouthpiece front elevation view), 5 (mouthpiece rear elevation view) (color added). In Gardner, the “mouthpiece” encompasses the terminal outlet-forming structure (the dispensing face) that defines where fluid exits. A POSITA reading this would understand “mouthpiece” to include the dispensing face that forms the terminal delivery structure, not just the external non-dispensing face region where the mouth or lips happen to rest.

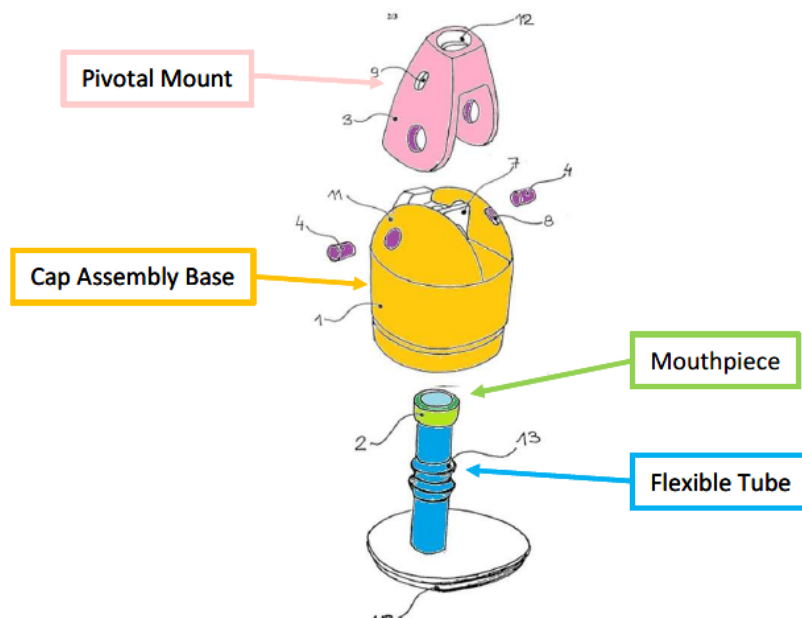
49. This understanding is further reinforced by how the '250 patent itself describes a “mouthpiece.” For example, the '250 patent discloses embodiments in which the user squeezes the fluid container, causing fluid to dispense through the outlet of mouthpiece into the user’s mouth. Ex. 1001, 9:67-10:3; *see also id.*, 9:59-10:13; Ex. 2021, 18:14-19:3, 22:10-21. In these squeeze-type embodiments, the fluid is expelled through the dispensing outlet 86 and into the user’s mouth without requiring the user to place the mouthpiece itself between their lips. A POSITA would understand that the component functioning as the “mouthpiece” in these

embodiments remains the terminal outlet structure that delivers fluid toward the mouth, even when the user's lips do not directly engage it.

50. Against this backdrop, CamelBak and Mr. Jobin's narrow interpretation of "mouthpiece" requires a specific external surface that directly contacts the user's mouth during drinking (POR, 74-76; Ex. 2016, ¶¶125-130), and in doing so, that interpretation effectively excludes from the term the portion of the structure that defines the dispensing face—the very region through which fluid is delivered. That view is unduly restrictive from a technical standpoint and is inconsistent with one of the inventor's own usage. As explained in Gardner, the "mouthpiece" encompasses the dispensing face through which fluid is selectively dispensed, even though the user's mouth may rest on an adjacent shoulder or surrounding region; the terminal outlet-forming surface is still part of Gardner's mouthpiece. Fluid-dispensing designs commonly include surrounding housings, partial enclosures, or protective rims around relatively small outlet components; a POSITA would still regard the outlet-defining component as the "mouthpiece" even where the mouth contacts adjacent structures or only lightly touch the outlet region. The intrinsic record does not indicate an intent to limit "mouthpiece" to a single exposed mouth-contacting surface. In my opinion, CamelBak's interpretation improperly reads additional constraints into the term and excludes commonplace and inventor-recognized configurations in which a dispensing face is part of a mouthpiece.

IV. RIBARITS DISCLOSES THE CLAIMED “MOUTHPIECE”

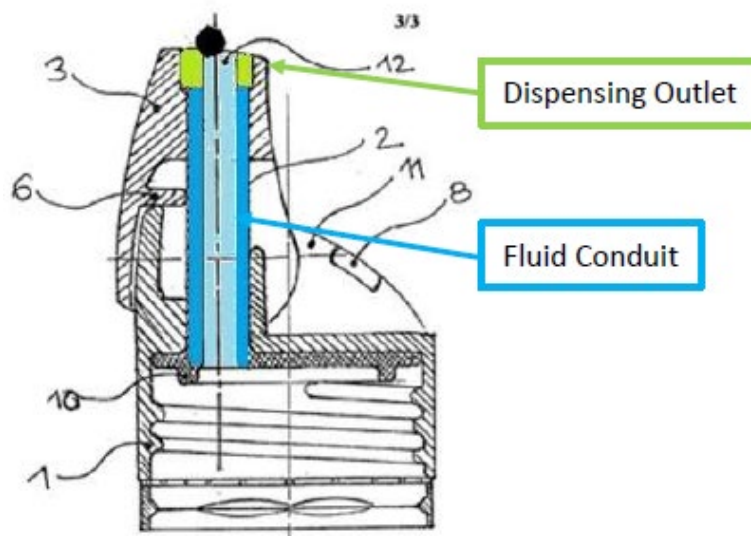
51. From the perspective of a POSITA applying the understanding of “mouthpiece” described in the preceding section, Ribarits discloses the claimed mouthpiece. Ribarits describes a tubular element 2 that is inserted into the closing cap and further inserted into the pivotable drinking spout 3, and that serves as the elastic tube through which fluid is drawn from the container to the user. Ex. 1002, ¶¶124-129.



Id., ¶125 (annotating Ex. 1006, Fig. 2). The distal end region of this tubular element 2 defines the terminal point of the fluid path and the opening through which fluid exits at the drinking interface. *Id.*, ¶¶125-129 (citing Ex. 1006, Figs. 1, 3). Under the ordinary technical meaning of “mouthpiece,” and consistent with the Board’s preliminary construction and Gardner’s description of mouthpiece including a

“dispensing face,” a POSITA would understand this distal outlet-forming portion of the tubular element 2 to be a mouthpiece.

52. In particular, Ribarits explains that the tubular element 2 defines the fluid conduit through the cap assembly and that the drinking spout 3 controls opening and closing of that conduit by pivoting between positions that open or crimp the tube. Ex. 1006, 2. In that configuration, it is the open end of the tubular element 2—located in the outlet region of the drinking spout 3—that forms the dispensing outlet of Ribarits, analogous to the “dispensing face” described in Gardner as part of the mouthpiece.

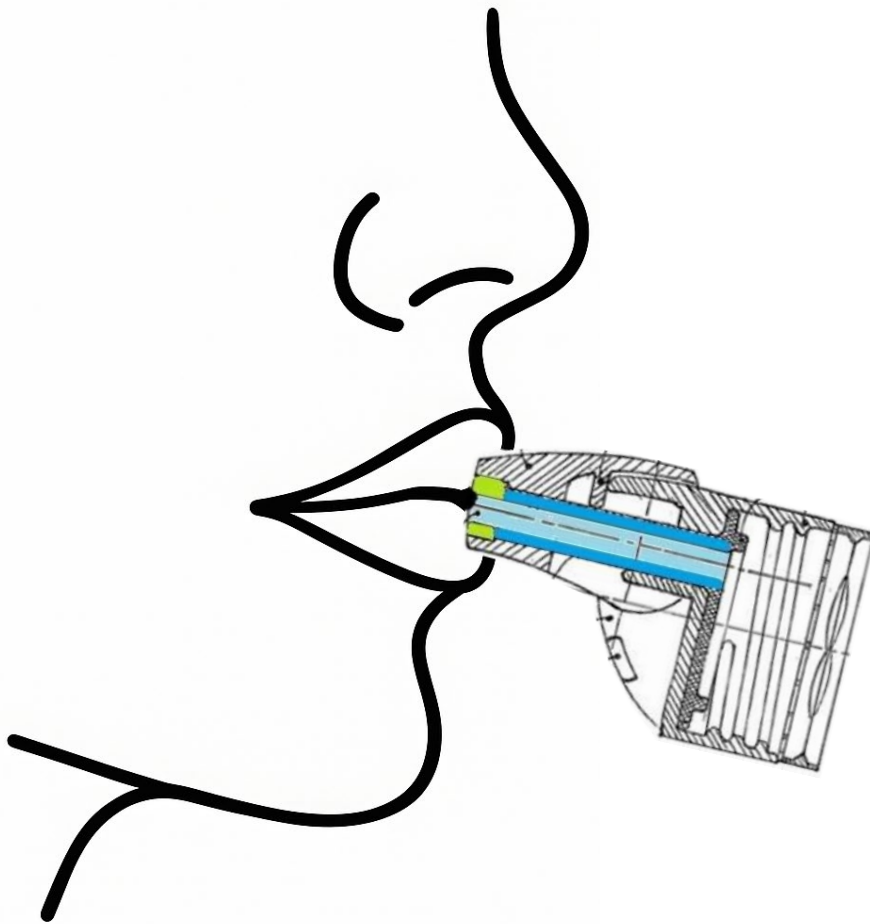


Ex. 1002, ¶129 (annotating Ex. 1006, Fig. 3). That this outlet is positioned within, or immediately adjacent to, the drinking spout 3 opening does not change its function: it is the user-facing end of the fluid path and the structure that delivers fluid to the user’s mouth when the drinking device in Ribarits is used as intended. A

POSITA would therefore identify the distal portion of the tubular element 2, including its dispensing surface, as the claimed “mouthpiece” in Ribarits. Ex. 1002, ¶¶124-31.

53. CamelBak’s proposed narrowing of “mouthpiece” appears to exclude this distal tube region from the term, on the theory that the mouthpiece must be only a specific surface on which the user’s lips rest (*see* POR, 75-76; Ex. 2016, ¶128)—here, the outer rim or body of the drinking spout 3 in Ribarits. That approach is at odds with how one of the inventors themselves used “mouthpiece”, where the mouthpiece expressly includes the dispensing face through which fluid is selectively dispensed, even though the lips are described in Gardner as seating against a different shoulder region (Ex. 1001, 8:12-16; Ex. 1014 3:38-41). It is also at odds with how a POSITA would view Ribarits: even if the user’s lips contact the drinking spout 3, the outlet-defining distal end of the tubular element 2 is a mouthpiece because it provides the dispensing face at the terminal end of the fluid path and is approached by the user’s mouth during use. And consistent with that understanding, CamelBak itself acknowledges that, in Ribarits’ design, “a user would put his or her mouth on the drinking spout 3” (POR, 76)—confirming that the end portion of Ribarits’ tubular element 2 enters the user’s mouth. *See also* Ex. 1019 (Jobin deposition transcript from IPR challenging ’255 patent), 34:23-35:8 (Mr. Jobin explaining Ribarits’ “drinking spout is engaged by both the teeth and the lips”).

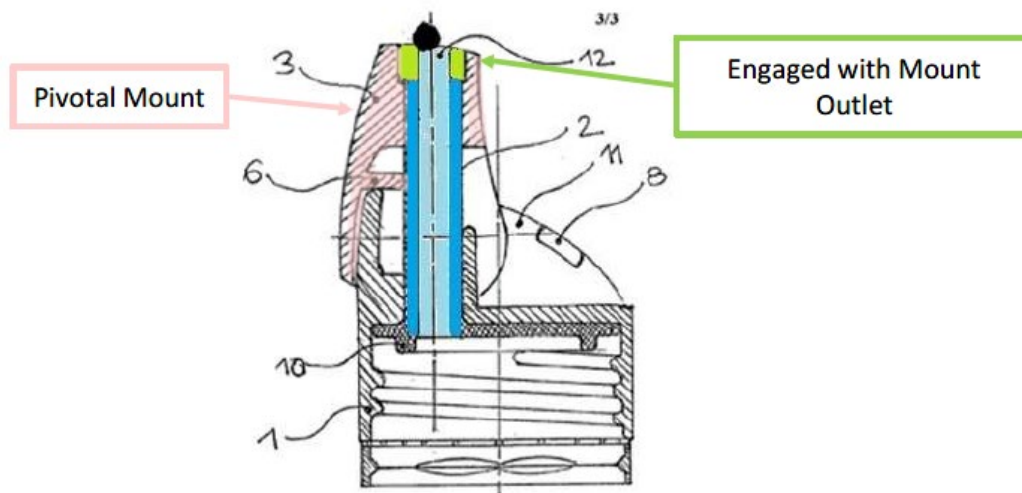
54. Even if CamelBak’s narrower view of “mouthpiece”—requiring the user’s lips to contact the mouthpiece during use—were adopted, a POSITA would still conclude that Ribarits meets the “mouthpiece” limitation. In actual use, the user does not need to place their mouth entirely around Ribarits’ pivotal mount. The user can and would place their lips on the dispensing face of the mouthpiece—i.e., on the rim or shoulder surrounding the opening where fluid exits from the dispensing outlet—while withdrawing liquid from the bottle (e.g., by pouring or sucking). This is illustrated in the following figure I prepared.



The dispensing face of the mouthpiece is flush with the surface of the pivotal mount, allowing the user's lips to contact the dispensing face as they withdraw fluid from the container. Thus, even under CamelBak's more restrictive formulation, Ribarits discloses a mouthpiece at the outlet region of the drinking spout that is directly contacted by the lips, supplied by the tubular element's dispensing end, and satisfies the "mouthpiece" limitation.

V. RIBARITS DISCLOSES THE CLAIMED MOUTHPIECE "COUPLED TO THE MOUNT OUTLET" AND "DISPOSED ON THE PIVOTAL MOUNT" FOR PIVOTAL MOVEMENT WITH THE PIVOTAL MOUNT

55. A POSITA would conclude Ribarits discloses a mouthpiece that is coupled to the mount outlet, as I explained in my first declaration. Ex. 1002, ¶¶126-127, 130-131. Ribarits describes a tubular element 2 whose distal end (green) is inserted into the outlet region of the pivotable drinking spout 3 (pink) and bears against a shoulder or stop structure within the outlet. *See* Ex. 1002, ¶¶124-29; Ex. 1006, 2, Figs. 1-3.



Ex. 1002, ¶126 (annotating Ex. 1006, Fig. 3). Further, claim 7 of Ribarits describes this distal end of the tubular element 2 as “snapping” into engagement with the shoulder region (i.e., “broadening outlet”) of the drinking spout 3, which a POSITA would recognize as a conventional snap-fit connection (i.e., a securing mechanism that generates frictional retention at the interface between the tubular element 2 and the broadening of the outlet opening 12). Ex. 1006, claim 7 (“in the drinking spout (3), a broadening of the outlet opening (12) enables a snapping of the sealed tubular element (2)”). In that configuration, the distal tube end is mechanically retained by the outlet region of the drinking spout 3 and held in its operative position by the engagement, as illustrated by the engagement geometry in Figure 3. The distal end of the tubular element 2 remains in the same position relative to the drinking spout 3 in both the dispensing and stowed positions, as Mr. Jobin acknowledged. *See* Ex. 1013 (Jobin deposition transcript.) 88:17-89:6 (“...the green portion inside the spout

is in the same position in the open and closed states. So it's moving with [the drinking spout 3], is my view. And I think that's clear from the sectional view as well."). A POSITA would therefore consider the mouthpiece (the outlet-forming distal region of the tubular element 2) as "coupled to the mount outlet."

56. For similar reasons, a POSITA would understand that the mouthpiece in Ribarits is disposed on the pivotal mount. Ex. 1002, ¶¶176, 191, 124-131. The drinking spout 3 functions as the pivotal mount, and it provides the mount outlet onto which the distal tube region is received and on which it is retained by the snap-fit described in claim 7. From a mechanical standpoint, the mount outlet of the drinking spout 3 is the part on which the tubular element 2's outlet-forming portion is mounted and supported. That the tubular element 2's distal end resides within an internal passage of the drinking spout 3 does not change the relationship: the mouthpiece is disposed on the mount outlet of the pivotal mount in the ordinary engineering sense of that phrase. CamelBak identified nothing in the intrinsic record that supports incorporating a separate, additional requirement for "disposed on." POR, 77-81.

57. In mechanical design, components received within a bore, recess, or internal passage of another part are described as being "disposed on" that part when the part provides the mounting structure and support, or when the part itself includes such a bore, recess, or opening that serves as a mounting structure. For example,

bearings and valves may be described as “disposed on” a housing or shaft even when they sit partly or entirely within an internal recess. A POSITA would not limit “disposed on” to the exterior surface of a part or to outward-protruding features, particularly where, as here, the claim language does not specify which surface of the pivotal mount the mouthpiece must be disposed on. *See* Ex. 1001, claims 7 and 13. For that reason, CamelBak’s assertion that a component received within the drinking spout can only be “in,” and not “on,” the pivotal mount (POR, 79-80) is inconsistent with ordinary engineering usage in this context. A POSITA would also recognize that “on” is a relative term in mechanical design: absent an express specification of a particular reference surface or orientation, “disposed on” is understood broadly to encompass components supported by, received within, or mounted at a location provided by the part in question. This interpretation aligns with the ordinary meaning of “on.” Merriam-Webster defines “on” as “a source of attachment or support,” a definition that speaks to the functional support relationship rather than whether a component resides external to another structure. Ex.1020, 3. Accordingly, a POSITA would understand a component that is supported at the mount outlet—as in Ribarits—to be “disposed on” that mount outlet even if the component extends into an internal passage.

VI. CONCLUSION

58. For the above reasons and as I explained in my first declaration, it is

Trove Brands v. CamelBak Products
Second Vallee Declaration in IPR2025-00140

my opinion that claims 1-18 of the '250 patent would have been obvious to a POSITA over the prior art.