

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SRAM, LLC,

Petitioner,

v.

FOX Factory, Inc.,

Patent Owner.

U.S. Patent No. 9,739,331 B2

Filing Date: August 10, 2015

Issue Date: August 22, 2017

Title: METHOD AND APPARATUS FOR AN ADJUSTABLE DAMPER

Case No. IPR2023-01302

PETITION FOR *INTER PARTES* REVIEW

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APPENDIX OF EXHIBITS

Exhibit	Description
Ex. 1101	U.S. Patent No. 9,739,331 B2 to Becker (“the ‘331 patent”)
Ex. 1102	Declaration of Eric Wang, Ph.D.
Ex. 1103	Declaration of Kevin Wesling
Ex. 1104	File History of the ‘331 patent
Ex. 1105	Japanese Patent No. JP1977156051(U) to Kashima (“ <i>Kashima</i> ”)
Ex. 1106	U.S. Patent No. 7,231,939 to Bruckbauer (“ <i>Bruckbauer</i> ”)
Ex. 1107	European Patent App. Pub. No. EP0979772A2 to Danter (“ <i>Danter</i> ”)
Ex. 1108	U.S. Patent No. 6,371,263 B1 to Hoose (“ <i>Hoose</i> ”)
Ex. 1109	U.S. Patent No. 7,624,752 to Huang (“ <i>Huang</i> ”)
Ex. 1110	U.S. Patent No. 4,145,067 to Ceriani (“ <i>Ceriani</i> ”)
Ex. 1111	U.S. Patent No. 1,174,168 to Kraft (“ <i>Kraft</i> ”)
Ex. 1112	U.S. Patent Pub. No. 2012/0080279 to Galasso (“ <i>Galasso</i> ”)
Ex. 1113	Fox Factory, Inc.’s Disclosure of Asserted Claims and Infringement Contentions Related to U.S. Patent Nos. 9,739,331 and 8,550,223, dated Dec. 23, 2022 (including Attachment A), <i>Fox Factory, Inc. v. SRAM, LLC</i> , Case No. 1:23-cv-00313-RM-KLM
Ex. 1114	Fox Factory, Inc.’s Amended Disclosure of Asserted Claims and Infringement Contentions Related to U.S. Patent Nos. 9,739,331 and 8,550,223, dated Mar.16, 2023 (including Attachment A), <i>Fox Factory, Inc. v. SRAM, LLC</i> , Case No. 1:23-cv-00313-RM-KLM

Exhibit	Description
Ex. 1115	Notice of Filing of Joint Disputed Claim Terms Chart, dated Aug. 3, 2023, <i>Fox Factory, Inc. v. SRAM, LLC</i> , Case No. 1:23-cv-00313-RM-KLM
Ex. 1116	U.S. Patent No. 6,592,136 B2 to Becker (“ <i>Becker</i> ”)
Ex. 1117	Declaration of Michael Hickey

CLAIM LISTING

Claim Element	Claim Language
1[pre]	A lower fork and air bleed assembly combination comprising:
1[a]	a lower fork, said lower fork configured to have a first end coupled to a vehicle wheel, and a second end configured to be telescopically engaged with a first end of an upper fork, said lower fork further comprising:
1[b]	a lower leg seal located at an outermost edge of said second end of said lower fork tube, said lower leg seal configured for sealing closed a gap disposed between said upper fork tube and said lower fork tube when said lower fork is telescopically engaged with said first end of said upper fork, thereby preventing an oil bath lubrication occupying an area within said lower fork tube at a first end of said lower fork tube from leaking from said lower fork; and
1[c]	an upper bushing attached to and positioned adjacent to said lower leg seal; and
1[d]	an air bleed assembly disposed on said lower fork tube, said air bleed assembly configured for equalizing ambient pressure within said lower fork, said air bleed assembly comprising:
1[e]	a fluid passage disposed between an interior of said lower fork and an exterior of said lower fork; and
1[f]	a manually operable valve located in said lower fork and coupled to said fluid passage, said manually operable valve having a first position substantially closing said fluid passage and a second position allowing a fluid to flow between said interior and said exterior, said manually operable valve disposed between said lower leg seal and said first end of said lower fork, and

Claim Element	Claim Language
1[g]	wherein said fluid passage and said manually operable valve are located at a distance from an oil bath lubrication within said lower fork, such that when said manually operable valve is in said second position, most, if not all of said oil bath lubrication remains within said lower fork and such that when trapped air pressure inside said lower fork, that is higher than a local ambient air pressure outside of said suspension fork or shock absorber, is relieved most, of said oil bath lubrication that is within said lower fork remains within said lower fork.
2	The lower fork and air bleed assembly combination of claim 1, wherein said fluid comprises: a gas.
3[pre]	The lower fork and air bleed assembly combination of claim 1, said air bleed assembly further comprising:
3[a]	a valve activator coupled with said manually operable valve, said valve activator comprising:
3[b]	an activation position placing said manually operable valve into said first position; and
3[c]	a deactivation position placing said manually operable valve into said second position, and whereupon when in said activation position, the trapped air pressure in said lower fork is equalized with the local ambient air pressure.
4	The lower fork and air bleed assembly combination of claim 3, wherein said valve activator comprises: a button to select said activation position and said deactivation position.
5	The lower fork and air bleed assembly combination of claim 3, wherein said valve activator is located on a die-cast feature of said lower fork.

Claim Element	Claim Language
6[pre]	The lower fork and air bleed assembly combination of claim 5, further comprising:
6[a]	a diametrical recess; and
6[b]	a sealing o-ring comprising:
6[c]	a sealed position; and
6[d]	an unsealed position,
6[e]	wherein said sealed position seals between said die-cast feature and said lower fork, whereupon when said valve activator is moved from said activation position to said deactivation position, said sealing o-ring moves into said diametrical recess, thereby attaining said unsealed position and letting air pressure by-pass into or out of said lower fork via a vent hole.
7	The lower fork and air bleed assembly combination of claim 3, wherein said manually operable valve comprises: a spring coupled with said valve activator, whereupon when said valve activator is moved into said deactivation position, said spring biases said valve activator toward said first position.
8	The lower fork and air bleed assembly combination of claim 7, wherein said second position comprises: a sealing engagement between said sealing o-ring and a seal bore, wherein when in said sealing engagement, said trapped air pressure does not by-pass into or out of said lower fork.

Petitioner SRAM, LLC (“Petitioner” or “SRAM”) requests *inter partes* review of claims 1-8 of the ‘331 patent (Ex. 1101), assigned on its face to Patent Owner Fox Factory, Inc. (“Patent Owner” or “Fox”).

I. PRELIMINARY STATEMENT

The claimed technology of the ‘331 patent is not really “technology” at all – it is simply a hole that can be opened or closed in a suspension device. This is something that has been around for many decades before the filing of the ‘331 patent application. Indeed, motorcycles, bicycles, vehicles, artificial limbs, and other devices have had such holes or openings in their suspension systems for many years, used for purposes of equalizing air, inserting and removing lubricant, and controlling sag, among other things. Obviously, methods of opening and closing those holes have also been around for many decades (e.g., screw plugs, Schrader valves).

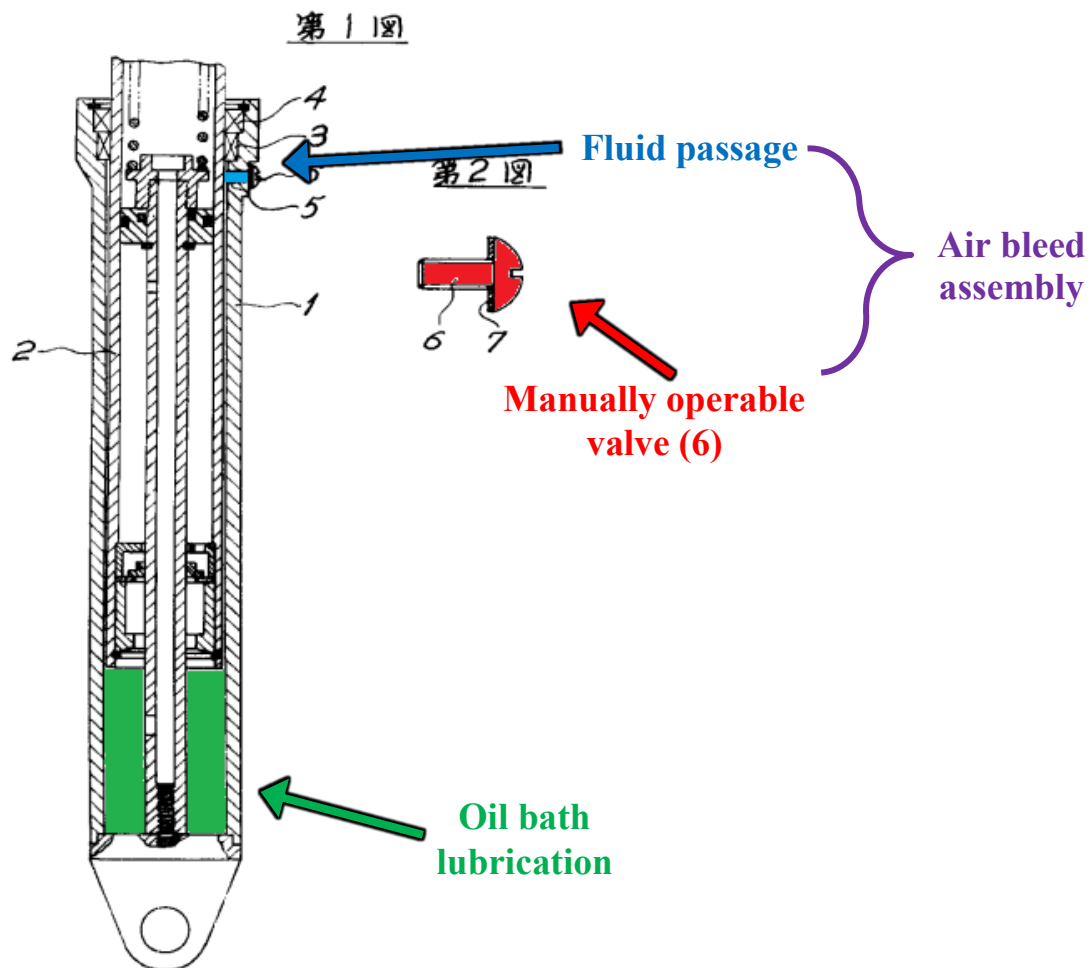
Fox’s ‘331 patent labels this hole and associated means for opening/closing the hole with the technical title of an “air bleed assembly” with a “valve”, as if Fox invented something special, which it did not. Ex. 1101, Abstract, 4:39-6:29. For convenience here, SRAM uses the same labels utilized by Fox, but there can be no question that what is claimed in the ‘331 patent is simply a small hole or opening in a vehicle suspension fork along with something that helps open and close that hole.

Air bleed systems for releasing trapped air pressure within systems were invented and patented long ago, at least as early as the turn of the 20th century. *See, e.g.,* Ex. 1111. Having such systems on vehicle suspension forks (such as for motorcycles and bicycles) was done for years before the filing of the ‘331 patent. *See, e.g.,* Exs. 1105, 1106. As just one example, motorcycles had air bleed holes in the outer/larger tubes of suspension forks for many years. Ex. 1102, ¶30; Ex. 1103, ¶26. It is common sense that removing what restricts the opening of a hole will allow air to pass between two areas. At the time of the initial ‘331 patent filing in May 2012, general motorcycle users and certainly persons of ordinary skill in the art (“POSITAs”)¹ were well-aware that holes or “air bleeds” like those long-established in the prior art would, when opened, allow air to pass between the inside and outside

¹ SRAM submits that a POSITA at the time of the ‘331 patent filing in May 2012 would have a degree in Mechanical Engineering and at least three years’ experience in vehicle suspension technology, or a Master’s degree in Mechanical Engineering with a concentration in design of vehicle suspension technology and/or shock absorbers. Ex. 1102, ¶33; Ex. 1103, ¶29. SRAM applies this level of skill.

of the fork (equalizing air pressure), and could also be used for purposes of adding fluid, for maintenance, or for improvements in operation. *Id.*

One such example of an “air bleed assembly” with a “valve” in a vehicle suspension system is Japanese Patent No. JP1977156051(U) to Kashima (“*Kashima*”) (Ex. 1105), not considered during prosecution of the ‘331 patent and filed decades before the ‘331 patent. As shown in Figures 1 and 2, *Kashima* disclosed such an air bleed assembly as part of a motorcycle suspension fork:



Further, as *Kashima* clearly discloses, the manually operable “valve” of its “air bleed assembly” is located above the resting internal oil bath, as anyone would locate such an opening so that the oil will not leak out when the “valve” is opened. Ex. 1105, FIGS. 1-2, ¶¶[01]-[05]; Ex. 1102, ¶¶57-58, 100; Ex. 1103, ¶¶53-54, 96. The *Kashima* example is identical to the broad claim scope that Fox now asserts. *Id.*; Ex. 1115, at 7. In other words, Fox is asserting to have patented what already existed in prior art not previously considered by the Examiner.²

² To distinguish from the cited prior art after having been rejected six times for its claimed invention, applicant Fox represented to the Examiner that Fox’s hole had to be located in a particular position, specifically between the fork’s lower leg seal and the bushing that is attached thereto. After obtaining claims based on that specific disclaimer, Fox now asserts that the novelty of its device is more expansive: that its “air bleed” hole can be located anywhere between the lower leg seal and the resting level of an internal oil bath in the fork, just so that oil will not leak out when the hole is opened. Ex. 1115, at 7. That is the equivalent to claiming that a new gas can’s point of novelty was by placing its opening above the gasoline level so that gasoline does not leak out when opened. It is hard to imagine a more common sense,

The ‘331 patent claims at issue here broadly claim an apparatus that is simply long-known suspension technology and is not specific to a particular use (*e.g.*, maintenance or improved operation of a specific vehicle) sufficient to distinguish it from what came before. As shown above and further herein, this combination is anticipated by previously undisclosed individual prior art and would have been obvious to a POSITA long before 2012, when the provisional application leading to the patent was filed. As such, all challenged claims are unpatentable and the Board should institute IPR to cancel these unpatentable claims.

obvious design choice than where to put an opening in a container holding liquid that should not spill. As shown in the prior art cited herein, not considered during prosecution, the location of an “air bleed assembly” anywhere along the length of a vehicle fork above an internal oil level is an obvious, routine optimization that involves nothing more than common sense and mechanical skill and, although the applicant Fox tried to use a unique location to distinguish prosecution-cited prior art, this does not distinguish from the new prior art proffered here. Ex. 1002, ¶¶40, 44-53; Ex. 1003, ¶¶36, 40-49.

II. PROSECUTION HISTORY

The original '331 patent claims were directed to what was labeled as an “air bleed system” for a suspension fork or shock absorber that simply had a manually operable valve to allow fluid to flow between an interior and exterior of the suspension fork. Ex. 1104, at 19. In simple words, the “air bleed” was a hole in the fork that could be opened and closed. The Examiner correctly rejected the claims under U.S. Patent Pub. No. 2012/0080279 to Galasso (“*Galasso*”) (Ex. 1112), which also discloses an air bleed system for a suspension fork or shock absorber. *See* Ex. 1104, 40-44, 83-97, 125-136, 152-153, 176-191, 224-225. Indeed, the Examiner rejected applicant Fox’s claimed air bleed system, not once but six separate times. *See id.* Fox repeatedly contested the Examiner’s reliance on *Galasso*, arguing, unsuccessfully, that its air bleed was different. *See id.*, 55-69, 105-116, 157-171.

Faced with these repeated rejections and even after adding a set of structural limitations to its air bleed, Fox finally made a clear and unmistakable disclaimer to distinguish *Galasso*, requiring that the air bleed assembly be located between the fork’s lower leg seal and upper bushing, at the far end of the fork away from the internal oil bath. *Id.*, 214-215. Placing the air bleed assembly in this position was simply an engineering (and not an inventive) choice, with a range of positions for air bleed assemblies known to POSITAs and described in multiple publicly available

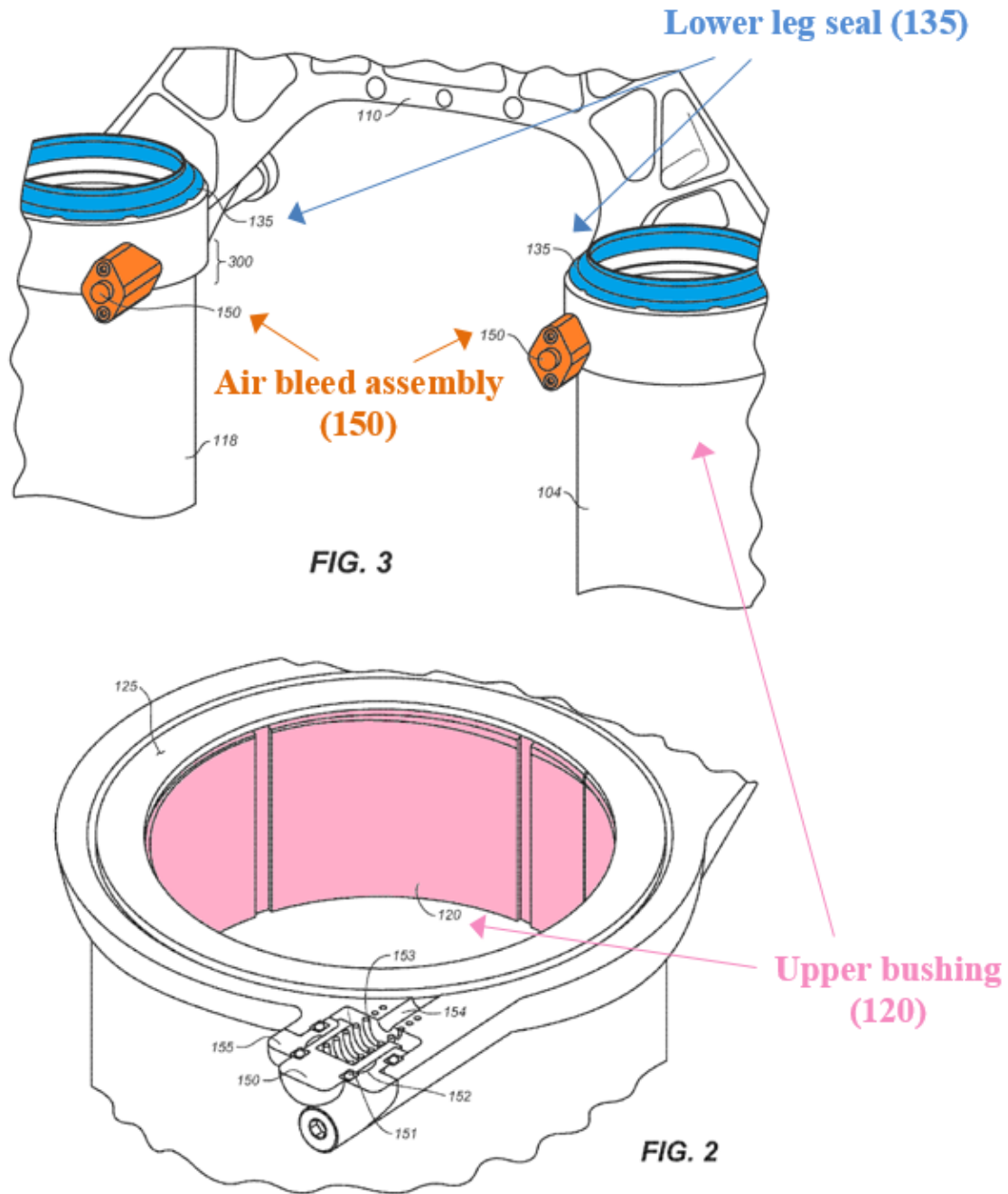
references long before 2012. Without the benefit of these prior art references, claims 1-8 issued.

III. CLAIM CONSTRUCTION³

For purposes of this IPR, claim construction is not necessary because the claims of the ‘331 patent are invalid in view of the prior art regardless of whether Fox’s prosecution history disclaimer on the position of the “air bleed assembly” is included in the claim construction.

To be sure, SRAM maintains that, properly construed, the term “air bleed assembly” includes the clear and unmistakable specific location disclaimer adopted by Fox to distinguish the *Galasso* prior art after six (6) rejections by the Examiner, wherein Fox required its location of the air bleed hole in a lower fork to be “located between the lower leg seal and the upper bushing,” as shown in the sole embodiment of the ‘331 patent:

³ Because the IPR procedure does not permit indefiniteness arguments, SRAM has not raised them here.



Ex. 1102, ¶50; Ex. 1103, ¶46. A full explanation of that prosecution history disclaimer is set forth in its expert declarations submitted herewith and in SRAM's parallel IPR petition. See Ex. 1102, ¶44-53; Ex. 1103, ¶40-49.

However, any location does not distinguish the prior art cited here, as it is an obvious and common sense design choice to locate the air bleed hole in any range of locations above the oil level. *See* Ex. 1102, ¶40; Ex. 1103, ¶36. Moreover, because Fox asserts infringement of SRAM’s suspension forks with air bleed holes outside the location between the lower leg seal and upper bushing, the ‘331 patent claims are clearly anticipated and rendered obvious if the claims are broad enough to cover the SRAM products Fox accuses of infringement, as set forth in Exs. 1113 and 1114. In this respect, SRAM disagrees with Fox’s charting of its claims compared to SRAM’s products, but uses them for purposes of this Petition, irrespective of how “air bleed assembly” is ultimately construed.

As to any remaining claim terms, the Board should construe them in accordance with the ordinary and customary meaning of such claim terms as understood by one of ordinary skill in the art.⁴ *See* 37 CFR § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

⁴ Fox has taken the position in the trial court that certain claim terms should be construed to correct alleged “errors” in the ‘331 patent. Ex. 1115, 10-11. SRAM disagrees with Fox that claim construction should be used as a vehicle to rewrite

IV. THE APPROPRIATENESS OF *INTER PARTES* REVIEW

A. The Petition's Reasonable Likelihood of Success

This petition easily meets the threshold that a petition for *inter partes* review must demonstrate “a reasonable likelihood that the Petitioner would prevail with respect to at least one of the claims challenged in the petition.” 35 U.S.C. § 314(a). Here, all of the elements of Claims 1-8 are disclosed in the prior art as explained below, and, where necessary, reasons to combine the prior art teachings and/or disclosures are established for each proposed ground under pre-AIA 35 U.S.C. § 103, applicable here based on the filing date of the initial patent application giving rise to the ‘331 patent.

claims and maintains that the ordinary and customary meaning of claim terms should control. *Id.*, 9-11; *see also* Ex. 1102, ¶11 n.1 (noting that “valve activator” is not required to necessarily be separate from the “manually operable valve” in dependent claim 3); Ex. 1103, ¶9 n.1 (same). However, as with “air bleed assembly,” claim construction of these other terms is not strictly necessary here because, even assuming *arguendo* that Fox’s revisionist constructions were adopted for these other terms, its claims are still invalid in view of the new references discussed herein.

B. The *Fintiv* Factors Weigh in Favor of Institution

Here, the factors set forth in *Apple Inc. v. Fintiv Inc.*, No. IPR2020-00019, 2020 WL 2126495 (P.T.A.B. Mar. 20, 2020) (“*Fintiv*”) weigh in favor of the Board instituting review in accordance with 35 U.S.C. § 314(a). Here, there is a parallel District Court proceeding involving the ‘331 patent and the same parties. However, no trial date has been set in the underlying case. Moreover, the claim construction process has just begun, the District Court has not provided any analysis of prior art invalidity issues, and the parties are only in the preliminary stages of discovery (with Fox’s motion for preliminary injunction having already been denied by the District Court). Ex. 1117, ¶16.

The merits of the Grounds presented herein are compelling and clear evidence of the unpatentable nature of the ‘331 patent claims. Further, where the Board “determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022). Because the factors clearly favor instituting review, the Board should exercise its discretion to institute.

C. Institution Is Warranted Because the Prior Art Relied Upon by Petitioner Was Neither Considered Nor Used During Prosecution of the ‘331 Patent.

The new prior art references relied upon by SRAM, alone or in combination, did not form the basis for any rejections of the ‘331 patent, further favoring institution.

The Board has consistently “held that a reference that ‘was neither applied against the claims nor discussed by the Examiner’ does not weigh in favor of exercising [] discretion under §325(d).” *Fasteners for Retail, Inc. v. RTC Indus., Inc.*, IPR2019-00994, Paper 9 at 7-11 (PTAB Nov. 5, 2019). Here, the prior art references were not considered or used by the Examiner during prosecution of the ‘331 patent, and the arguments presented herein are not the same nor substantially the same as those considered during prosecution.

In *Becton Dickinson*, the Board instituted review and distinguished a situation where, like here, prior art was never considered during prosecution, considering a non-exclusive list of six factors. *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8, at 17-18, 23 (PTAB Dec. 15, 2017).

Applying the first two factors to *Kashima*, *Hoose*, *Ceriani*, *Bruckbauer*, *Huang*, and *Danter* (the “IPR Prior Art”), their disclosures are not like those considered during prosecution. *Kashima* discloses a front suspension fork that has

an opening to allow gas to be purged from the lower fork. Ex. 1105, [01]-[05]. *Hoose* discloses “[a] vehicle and vehicle suspension including a number of shock chambers to provide different levels of incrementally increasing shock absorption/cushioning.” Ex. 1108, Abstract. *Ceriani* discloses a front suspension fork that includes a deformable pocket to compensate for displacement due to movement of the damper’s piston. Ex. 1110, Abstract. *Huang* discloses an improved air “inflation valve that automatically releases surplus high-pressure air when an object is excessively inflated via the inflation valve.” Ex. 1109, 1:6–8. *Bruckbauer* discloses an air bleed system that allows air to pass through a front suspension fork (Ex. 1106, Abstract), whereas *Danter* discloses a suspension fork having integrated features for accommodating brake actuating systems, wherein the fork may be cast of metal materials. Ex. 1107, 4:18–20, Abstract. Ex. 1102, ¶43; Ex. 1103, ¶39. Because none of the specific technologies disclosed in the IPR Prior Art were addressed during prosecution, the first two *Becton Dickson* factors 1 and 2 favor institution.

Similarly, factors 3 and 4 favor institution because the IPR Prior Art was noted cited, considered, or distinguished during prosecution. Likewise, because the Examiner did not previously consider any of the IPR Prior Art, factors 5 and 6 do

not apply. As a result, the *Becton Dickinson* factors collectively weigh in favor of institution.

V. CLAIMS 1-8 OF THE ‘331 PATENT ARE UNPATENTABLE

A. Ground I: Claims 1 Through 3 and 5 Are Anticipated Under 35 U.S.C. § 102 by Japanese Patent No. JP S52-156051(U) to *Kashima*.

- 1. *Kashima* discloses an air bleed assembly on a vehicle suspension fork located near the top of the suspension fork’s lower fork.**

The provisional patent application for what became the ‘331 patent was filed on May 9, 2012. Japanese Patent No. JP1977156051(U) to *Kashima* (“*Kashima*”) is prior art under pre-AIA 35 U.S.C. § 102(b), having been patented on May 21, 1976. Ex. 1105 (*Kashima*).

Kashima discloses “[a] hydraulic shock-absorbing front fork for suspension having an inner tube (2) slidably inserted into the hollow space of an outer tube (1)[.]” Ex. 1105, 8. The telescoping front fork is intended to be used with a vehicle, such as a motorcycle. Ex. 1105, [01]. A bearing **3**, also known as a bushing, is used to position the outer tube **1** relative to the inner tube **2**. Ex. 1102, ¶56; Ex. 1103, ¶52.

Fig. 1

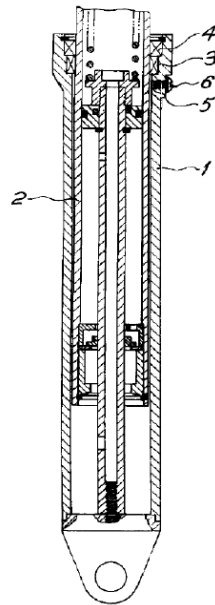
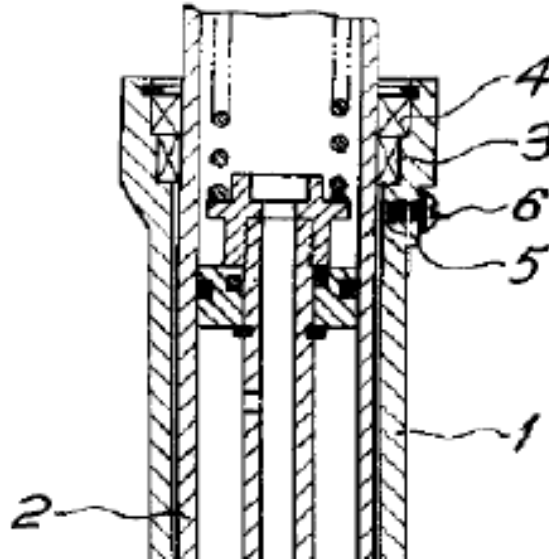


Fig. 1



Ex. 1105, FIG. 1. *Kashima* explains that gas within the outer tube **1** may cause increased friction and decreased smoothness during operation when the gas displaces oil between the telescoping outer tube **1** and inner tube **2**. Ex. 1105, [02]. *Kashima* addresses this gas-based oil displacement by supplying a threaded hole **5** near the very top of the outer tube **1**. When the vehicle suspension is fully assembled, the area between the outer tube **1** and the inner tube **2** may be purged of all gas. Ex. 1105, [03]-[05]. The gas may be purged by filling much of the space between the outer tube **1** and inner tube **2** with oil and then depressing the inner tube **2** into the outer tube **1**. Once oil begins to run from the threaded hole **5**, it may then be capped with a setscrew **6** that carries an oil seal **7**, thereby sealing in the oil within that space. Ex. 1102, ¶57; Ex. 1103, ¶53.

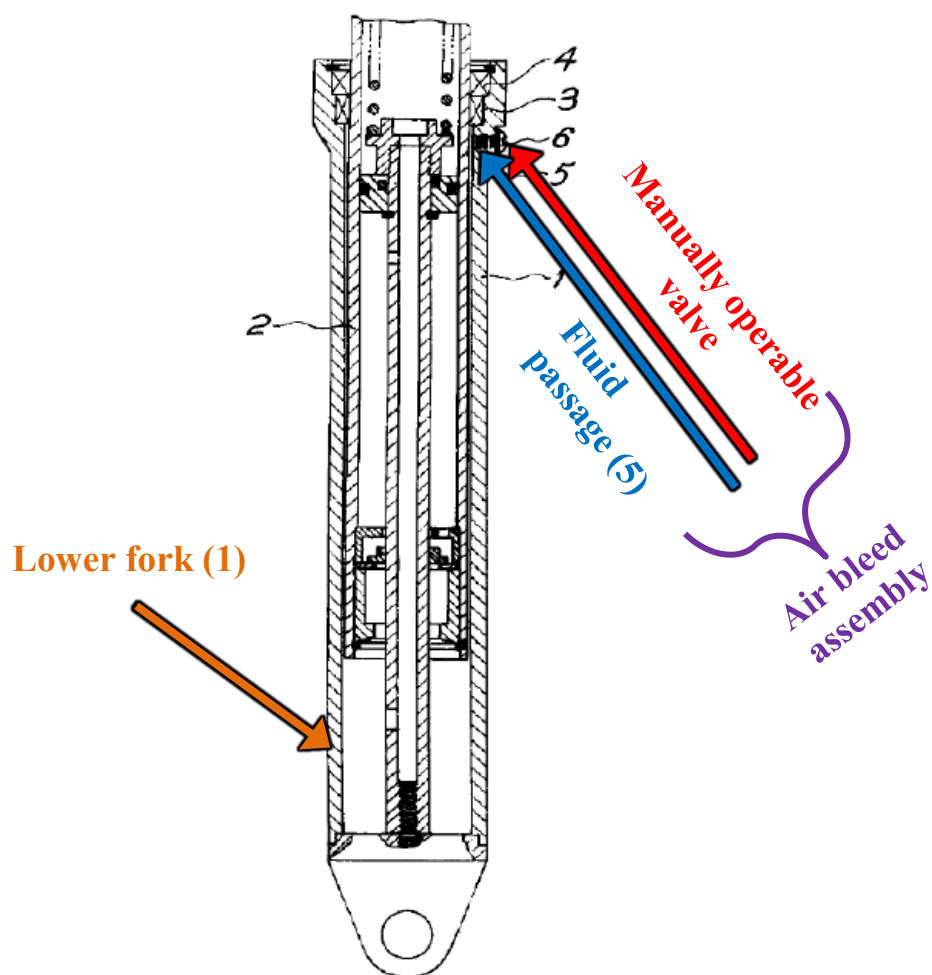
The threaded hole **5** within the outer tube **1** is a passage that allows fluid communication between the interior and exterior of the outer tube **1**. This passage **5** may be opened or closed using the setscrew **6** and oil seal **7**. When the passage **5** is open, the pressure of any gas within the outer tube **1** will necessarily be equalized with the ambient air pressure. Thus, the setscrew **6**, oil seal **7**, and the threaded hole **5** may be considered to be an air bleed assembly (as recited in the '331 patent claims) capable of bleeding gas within the outer tube **1** to the ambient air. This process necessarily equalizes the gas pressures inside and outside of the outer tube **1**. Ex. 1102, ¶58; Ex. 1103, ¶54.

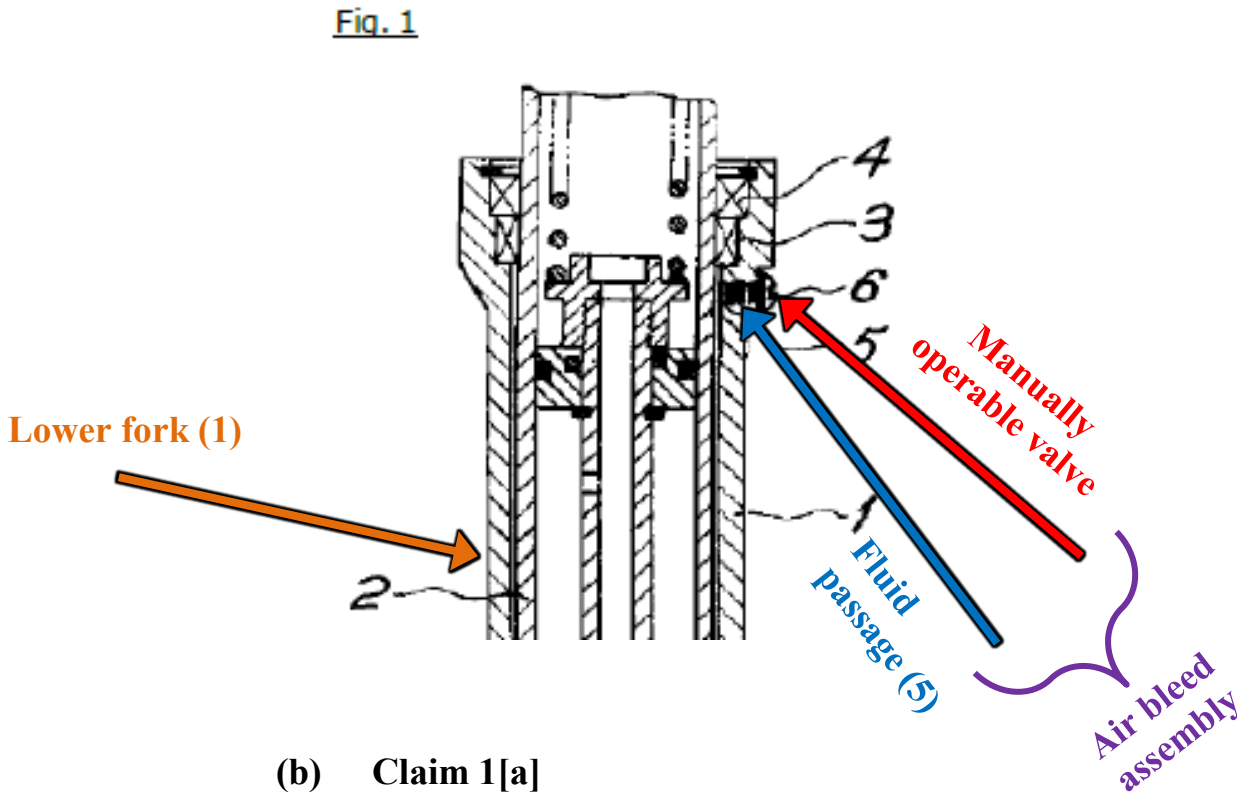
2. Independent Claim 1

(a) Claim 1[pre]

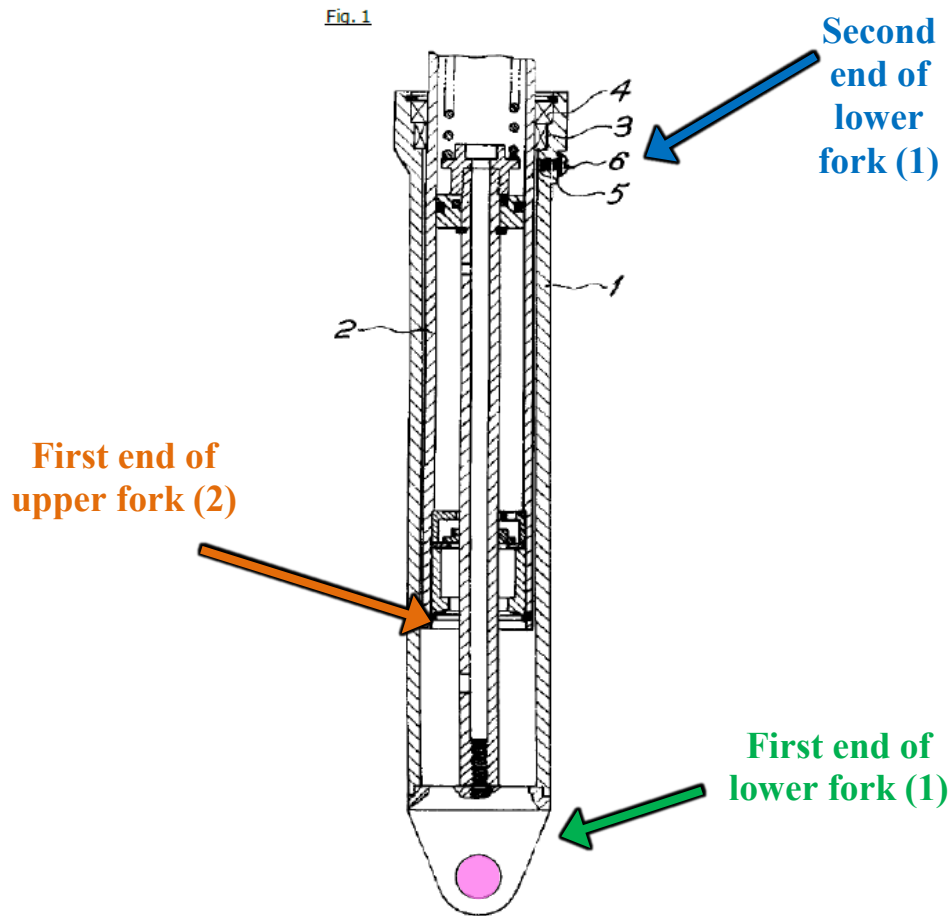
As required, *Kashima* includes a lower fork **1** (orange arrow) including an air bleed assembly (purple). *Kashima* discloses an outer tube **1** including a threaded hole **5** formed therein, as well as a setscrew **6** with an oil seal **7** for closing the threaded hole **5**. Ex. 1102, ¶93; Ex. 1103, ¶89; Ex. 1105, FIG. 1.

Fig. 1





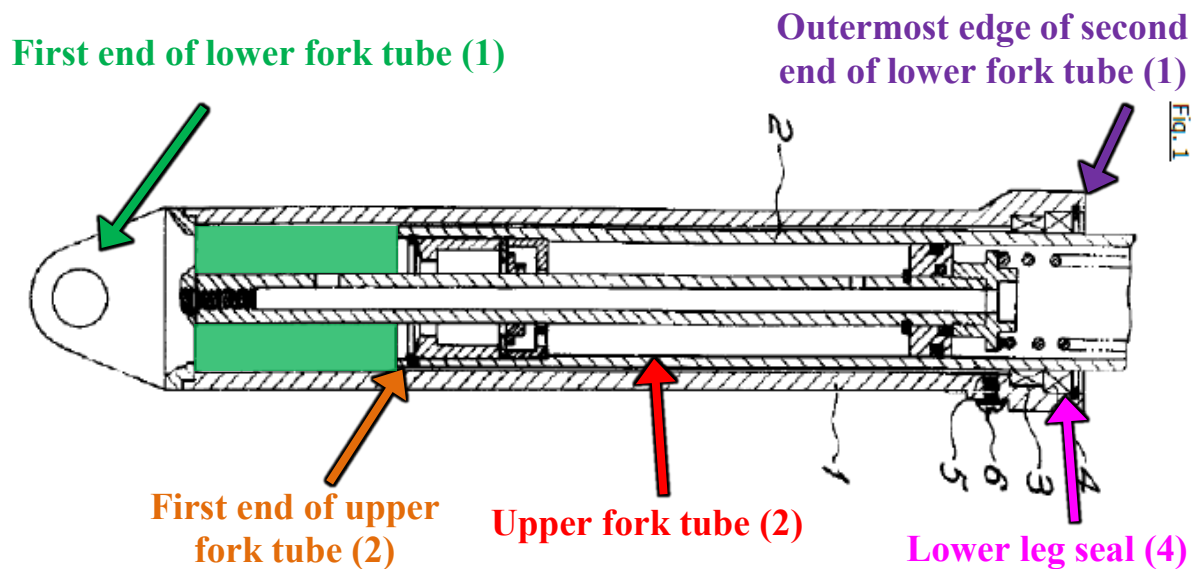
As required, *Kashima* includes a lower fork **1** configured to have a first end (green arrow) coupled to a vehicle wheel, and a second end (blue arrow) configured to be telescopically engaged with a first end (orange arrow) of an upper fork **2**. *Kashima's* first end of the lower fork **1** includes a hole (pink highlight) intended to facilitate attachment of an axle and a related wheel to the lower fork **1**. Ex. 1102, ¶94; Ex. 1103, ¶90; Ex. 1105, FIG. 1.



(c) Claim 1[b]

As required, *Kashima* includes a lower leg seal 4 (pink arrow) located at an outermost edge of the second end (purple arrow) of the lower fork tube 1, the lower leg seal 4 configured for sealing closed a gap disposed between the upper fork tube 2 (red arrow) and the lower fork tube 1 when the lower fork 1 is telescopically engaged with the first end (orange arrow) of the upper fork 2, thereby preventing an oil bath lubrication occupying an area (green highlight) within the lower fork tube 1 at a first end (green arrow) of the lower fork tube 1 from leaking therefrom. *See,*

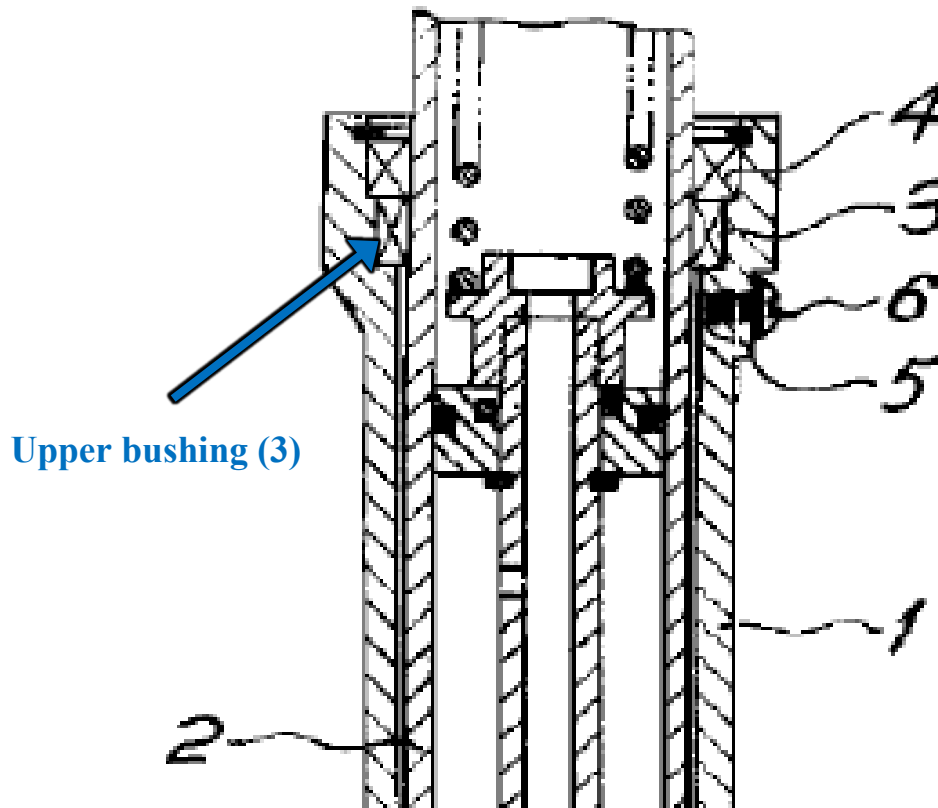
e.g., Ex. 1105, [01], [04]. *Kashima* explains the area (green highlight) within the lower tube **1** is to be filled with oil. *See, e.g.*, Ex. 1102, ¶95; Ex. 1103, ¶91; Ex. 1105, [01], [04], FIG. 1.



(d) Claim 1[c]

As required, *Kashima* includes an upper bushing **3** (blue arrow) attached to and positioned adjacent to the lower leg seal **4**. *Kashima's* bearing **3** would be considered by a POSITA to be a bushing. Ex. 1102, ¶96; Ex. 1103, ¶92; Ex. 1105, FIG. 1.

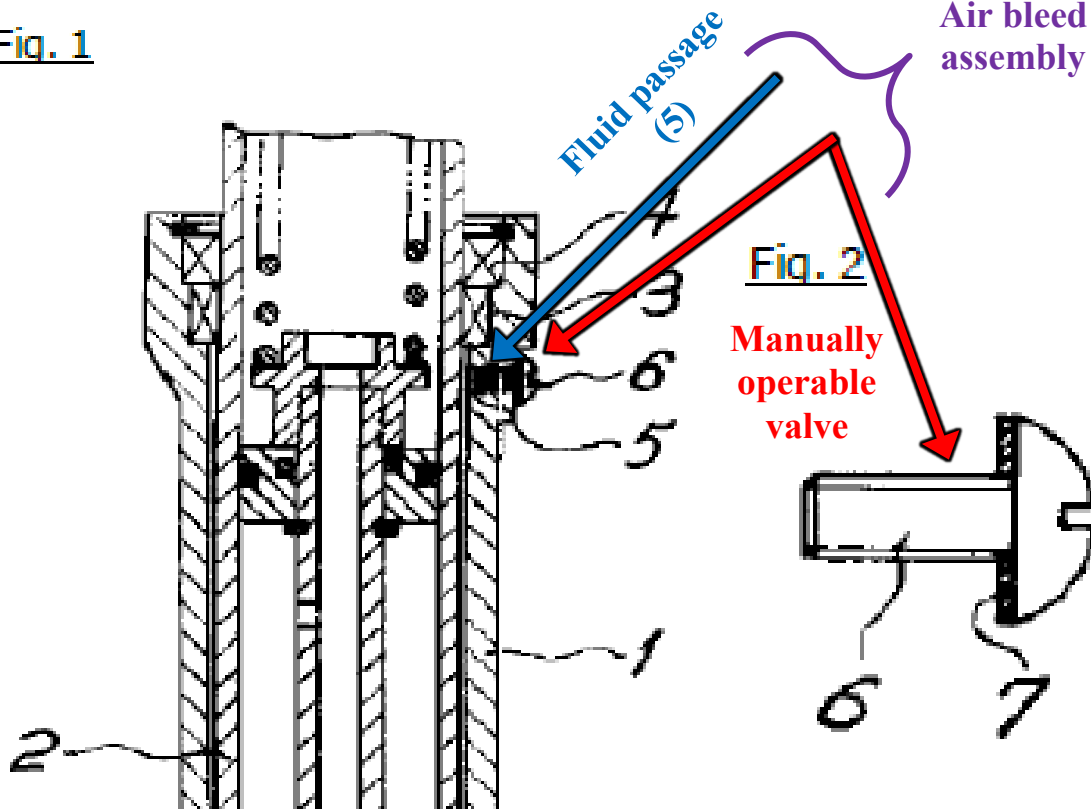
Fig. 1



(e) Claim 1[d]

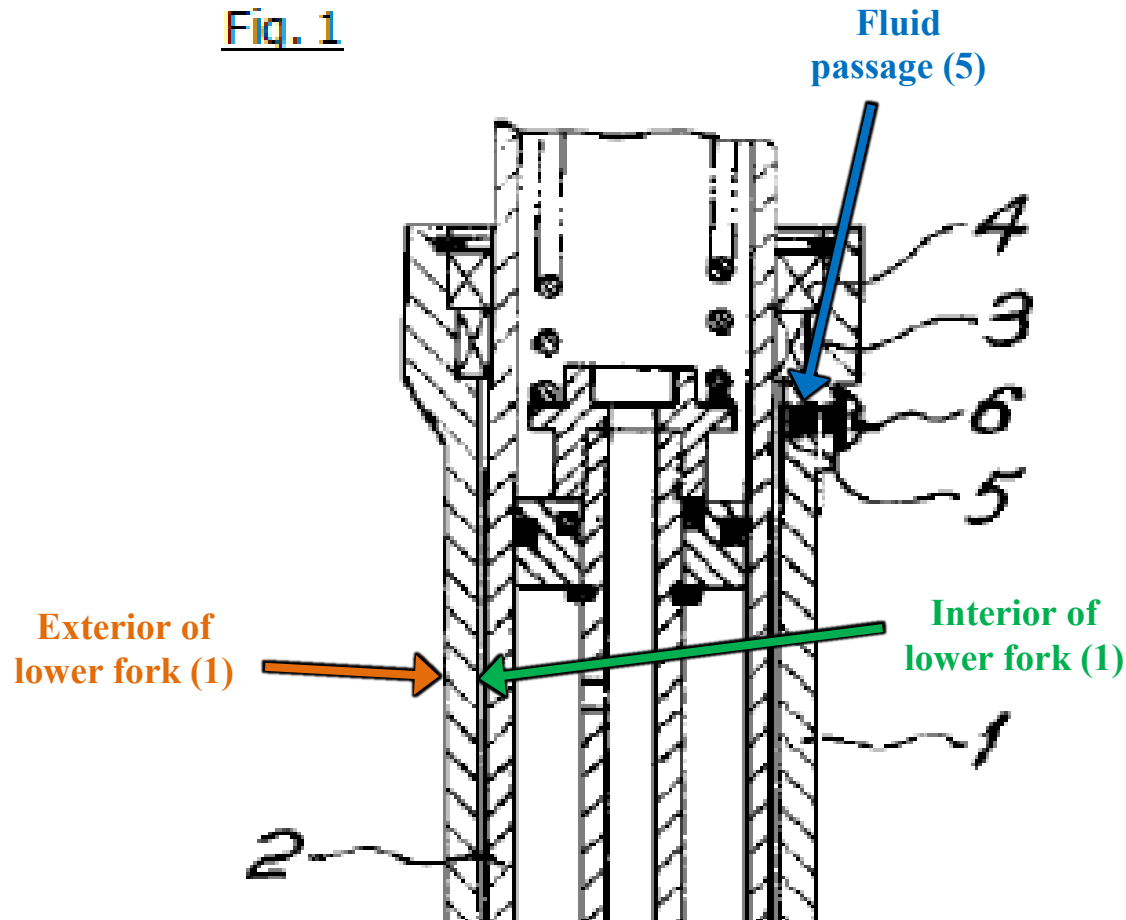
As required, *Kashima* includes an air bleed assembly **5, 6, 7** (purple bracket) disposed on the lower fork tube **1** that is configured for equalizing ambient pressure within the lower fork **1**. When *Kashima*'s manually operable valve **6, 7** is removed or sufficiently loosened, the air pressure within the lower fork **1** equalizes with the ambient air pressure. In particular, this equalization would occur during setup and maintenance of *Kashima*'s suspension fork because these periods always include gas within the lower fork **1**. Ex. 1102, ¶97; Ex. 1103, ¶93; Ex. 1105, FIGS. 1-2.

Fig. 1



(f) Claim 1[e]

As required, *Kashima* includes a fluid passage 5 (blue arrow) disposed between an interior (green arrow) and an exterior (orange arrow) of the lower fork 1. Ex. 1102, ¶98; Ex. 1103, ¶94; Ex. 1105, FIG. 1.

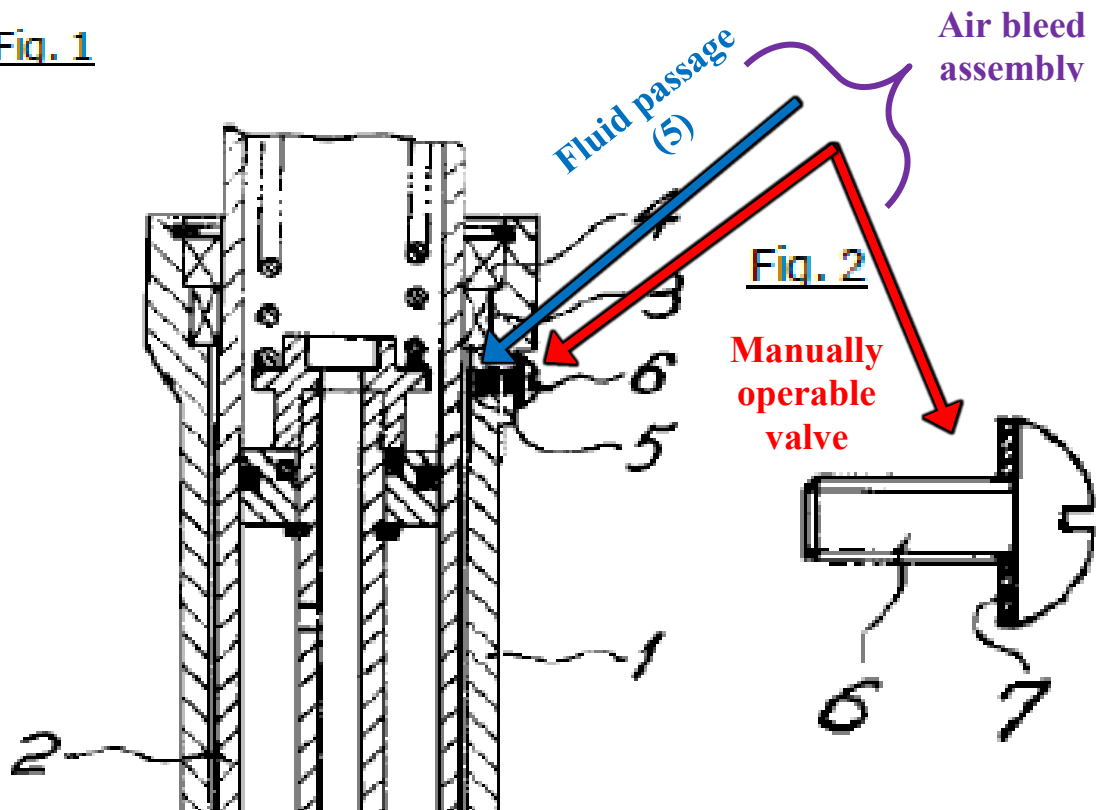


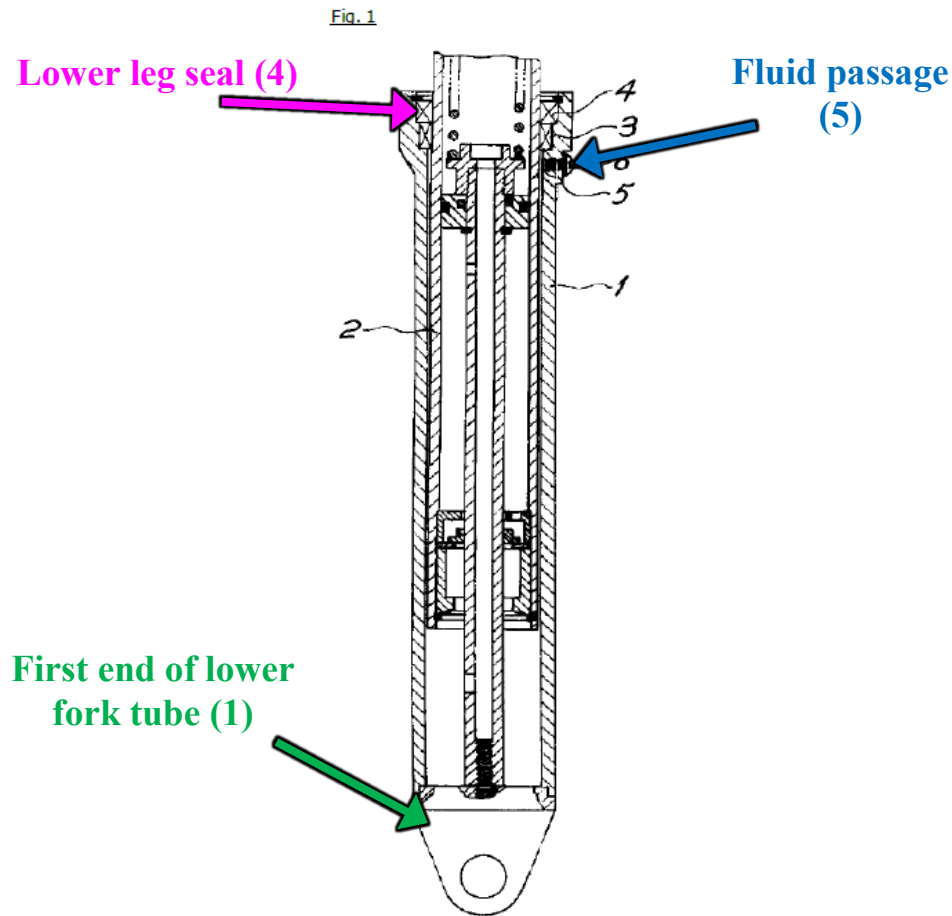
(g) Claim 1[f]

As required, *Kashima* includes a manually operable valve **6, 7** (red arrow) located in the lower fork **1** and coupled to the fluid passage **5** (blue arrow). *Kashima's* manually operable valve **6, 7** has a first position substantially closing the fluid passage **5** and a second position allowing a fluid to flow between the interior and the exterior. *Kashima* discloses the manually operable valve **6, 7** may be used to manually remove air from *Kashima's* lower fork **1**. See, e.g., Ex. 1102, ¶99; Ex. 1103, ¶95; Ex. 1105, [01], [04], FIGS. 1-2. *Kashima's* manually operable valve is

disposed within a threaded hole 5 between the lower leg seal 4 and the first end of the lower fork 1. *Id.*

Fig. 1



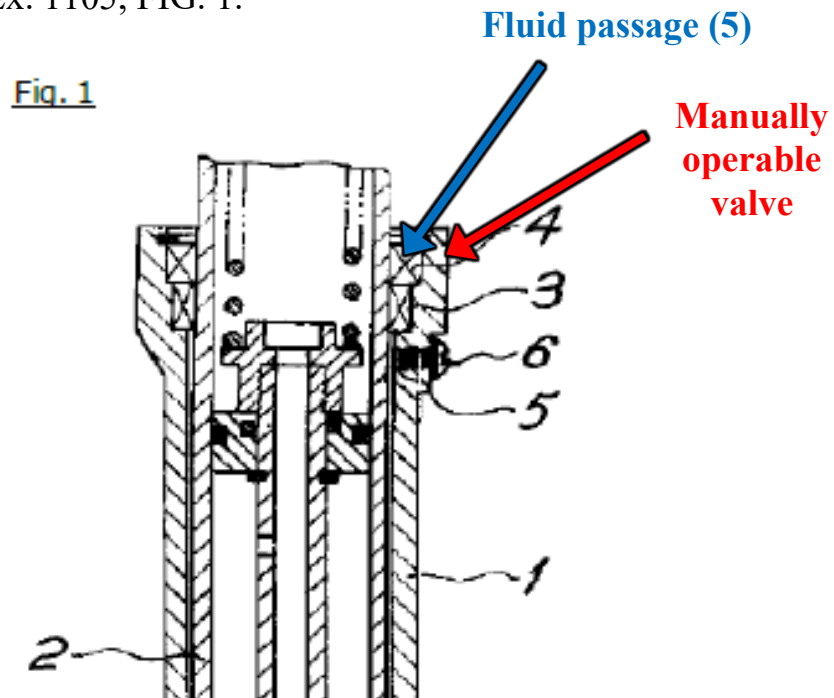


Ex. 1105, FIGS. 1-2.

(h) Claim 1[g]

As required, *Kashima* includes a fluid passage **5** (blue arrow) and a manually operable valve **6, 7** (red arrow), which are located at a distance from an oil bath lubrication within the lower fork **1**. This positioning of the valve **6, 7** results in a configuration wherein, when the manually operable valve **6, 7** is in the second position, most if not all of the oil bath lubrication remains within the lower fork **1** because the valve is near the top of the lower fork **1** and can be closed once any oil

begins to leak. Ex. 1105, [04]. Further, any air within the lower fork **1** will be equalized to ambient pressure when the valve **6, 7** is opened, while the vast majority of the oil will remain in the oil bath lubrication space within the lower fork **1**. The condition of having a distance between the oil bath lubrication and the fluid passage **5** occurs at least during setup and maintenance of *Kashima's* suspension fork because these periods always include some gas within the lower fork **1**. Ex. 1102, ¶100; Ex. 1103, ¶96; Ex. 1105, FIG. 1.



3. Claim 2

As required, *Kashima* includes the lower fork **1** and air bleed assembly combination of claim 1, and further includes air flowing through the fluid passage **5**, at least when the user allows air to enter into the fork **1** via the valve **6, 7**. A gas

may flow through the fluid passage **5** during setup and maintenance of *Kashima's* suspension fork because these periods always include gas within the lower fork **1**. Ex. 1102, ¶101; Ex. 1103, ¶97.

4. Claim 3

(a) Claim 3[pre]

As discussed above, *Kashima* includes the lower fork **1** and air bleed assembly **5, 6, 7** combination of claim 1.

(b) Claim 3[a]

As required, *Kashima* includes a valve activator coupled with the manually operable valve **6, 7**. The valve activator is the portion of **6** for communicating force from a manual input to the threads of **6**. *Kashima* includes an internal valley within the semi-domed head portions of the setscrew **6**, which internal valley may be used for communicating force from a manual input to the threaded portions of the setscrew **6** and thereby causing the oil seal **7** of the manually operable valve **6, 7** to press into the lower fork **1**. Ex. 1105, FIGS. 1-2. Alternatively, the threads of the setscrew **6** can be considered the valve activator, as identified by the Examiner during the prosecution of the '331 patent. Ex. 1104, 88 (identifying *Galasso's* (Ex. 1112) threads of 214, 314, 414, or pin of Schrader-type 470 as the valve activator); Ex. 1102, ¶103; Ex. 1103, ¶99.

(c) Claim 3[b]

As required, *Kashima* includes a valve activator (described above in claim 3(a)) that includes an activation position where the manually operable valve **6, 7** is in an open position.⁵ In particular, the valve activator is in an open position when the setscrew **6** is sufficiently loosened. Ex. 1102, ¶104; Ex. 1103, ¶100; Ex. 1105, FIGS. 1-2.

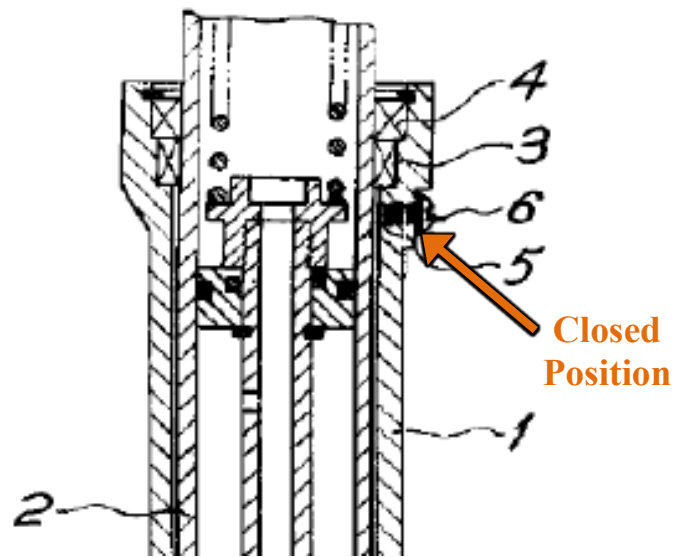
(d) Claim 3[c]

As required, *Kashima* includes a valve activator that includes a deactivation position where the manually operable valve **6, 7** is in a closed position (orange

⁵ SRAM notes that the term “activation position” conflates the first and second positions between claims 1 and 3 of the ‘331 patent, in that claim 1 requires the first position to be the closed position, whereas claim 3 requires that the activation position be both the first (closed) position and an open position where fluid may flow around the valve, making claim 3 indefinite. Because this indefiniteness issue cannot be addressed in this IPR, SRAM has adopted Fox’s mapping and proposed rewriting of the claims. Ex. 1113, at 35-37; Ex. 1114, at 37-39; Ex. 1115, at 10-12; Ex. 1102, ¶104 n.2; Ex. 1103, ¶100 n.2.

arrow), as shown in *Kashima's* FIG. 1. The valve activator is in a closed position (orange arrow) when the setscrew **6** is sufficiently tightened into the threaded hole **5**. Ex. 1102, ¶105; Ex. 1103, ¶101; Ex. 1105, FIG. 1.

Fig. 1

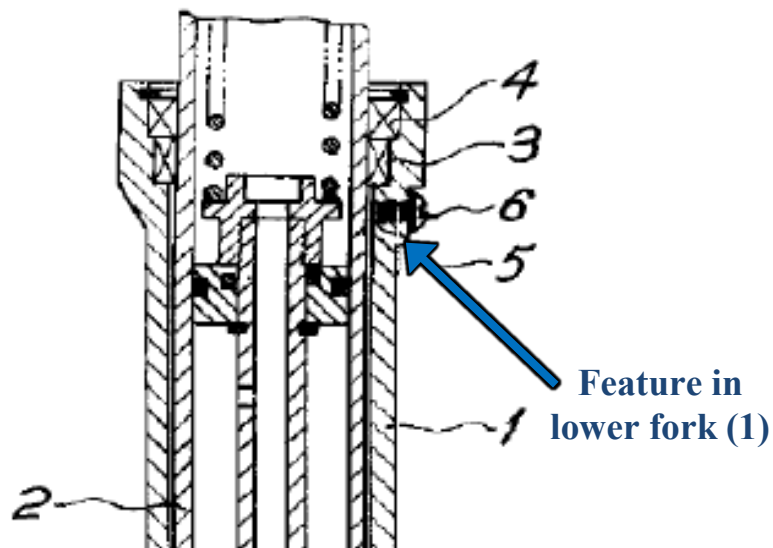


5. Claim 5

Kashima discloses the lower fork and air bleed assembly combination of claim 3. *Kashima* includes a manually operable valve **6, 7** fixed into a passage **5** through the body of *Kashima's* lower fork **1**, which passage **5** is formed on a die-cast feature (blue arrow) in *Kashima's* lower fork **1**. The structures of *Kashima's* lower fork **1** do not differ from those made by die-casting, and because this is a product-by-process limitation that does not distinguish itself from the structure imparted by other prior art manufacturing techniques (and should be given no

patentable weight), this limitation regarding die-casting cannot distinguish claim 5 from *Kashima*. See *Kamstrup A/S v. Axioma Metering UAB*, 43 F.4th 1374, 1382–83 (Fed. Cir. 2022) (claim element reciting “cast in one piece” was a product-by-process claim element and given no patentable weight at least because patent owner failed to show that the limitation imparted any structural or functional differences). See also Ex. 1102, ¶106; Ex. 1103, ¶102; Ex. 1105, FIG. 1.

Fig. 1



B. Ground II: Claims 1 Through 8 Are Rendered Obvious by *Kashima* in View of *Bruckbauer*, and Further in View of *Danter*.

1. *Bruckbauer* discloses an air bleed assembly.

U.S. Patent No. 7,231,939 B1 to Bruckbauer (“*Bruckbauer*”) is prior art under pre-AIA 35 U.S.C. § 102(b), having been filed on March 9, 2005 and issued on June 19, 2007. Ex. 1106.

Bruckbauer discloses an air bleed assembly. *Bruckbauer* “relates to a valve system for purging gases that become trapped within the fork tubes or suspension of a motorcycle’s fork.” Ex. 1106, 1:10-12. *Bruckbauer* discloses that “[e]xcessive trapped gas stiffens [a given fork] assembly.” Ex. 1106, 1:33. To alleviate this issue, *Bruckbauer* provides “a bleed button, or pressure relief valve” extending through the body of an outer fork leg:

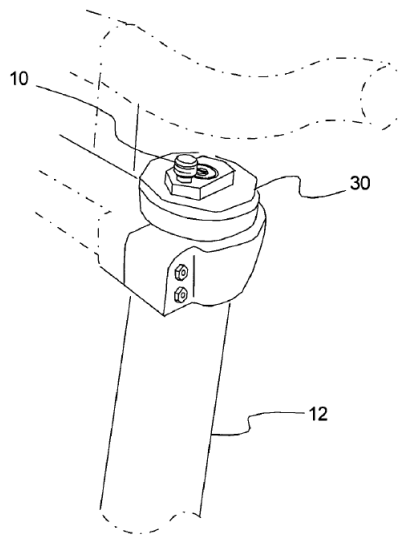
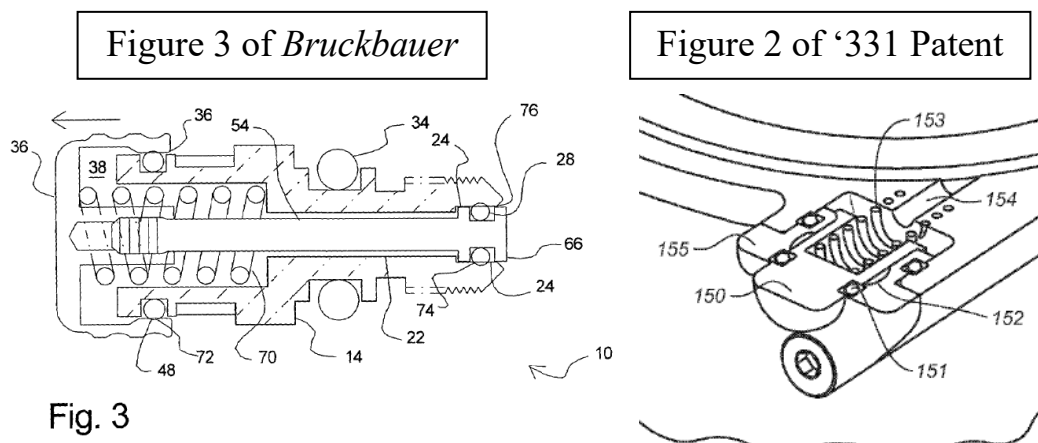


Fig. 1

Ex. 1106, 2:24-34, FIG. 1; Ex. 1102, ¶60; Ex. 1103, ¶56.

The button's (*Bruckbauer's* valve cap **36**) "functions include opening or closing access to an air escape passage through the air passage inside the valve body" using, in part, an o-ring **28** carried by a connecting shaft **54**. Ex. 1106, 2:38–40. This opening and closing may "allow[] any buildup of excess pressure to be relieved by the user ... in order to restore the dampener's design characteristics." Ex. 1106, 4:25-28. A spring **70** biases the pressure relief valve **10** toward the closed position. The structure of *Bruckbauer's* pressure relief valve **10** is the same as the '331 patent's air bleed assembly **300**:



Compare Ex. 1106, FIG. 3, with Ex. 1101, FIG. 2. Ex. 1102, ¶61; Ex. 1103, ¶57.

2. *Danter* discloses a die-cast procedure.

European Patent Application Publication No. EP0979772A2 to *Danter* ("*Danter*") is prior art under pre-AIA 35 U.S.C. § 102(b), having been filed on February 8, 1999, and published on February 16, 2000. Ex. 1107.

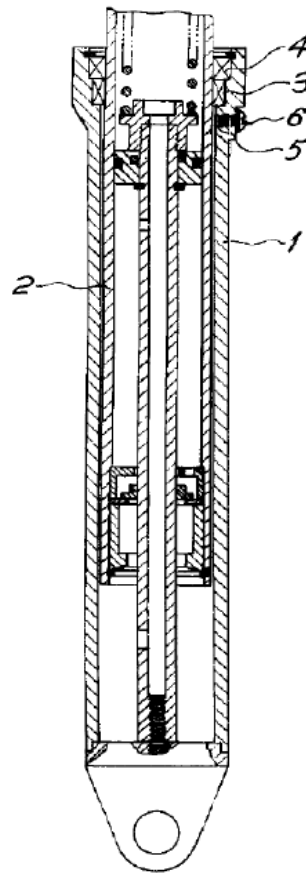
Danter discloses the use of an aluminum casting process for making portions of a fork tube. *See, e.g.*, Ex. 1107, [0011], [0018]. *Danter* states that POSITAs preferred such a casting process. *Id.* *Danter* discloses that the casting process may include the formation of features formed on and attached to the cast fork tubes. *See, e.g.*, Ex. 1107, FIGS. 8-14; [0013], [0015], [0017]. Casting using a die is well-known and widely utilized in manufacturing bicycle and motorcycle forks, including suspension forks. Ex. 1102, ¶63; Ex. 1103, ¶59.

3. It would have been obvious to a POSITA to modify *Kashima* with *Bruckbauer*, thereby yielding the subject matter of Claims 1-8.

Combining *Kashima* and *Bruckbauer* is straightforward: a POSITA would modify *Kashima*'s typical suspension fork to substitute *Bruckbauer*'s pressure relief system for *Kashima*'s setscrew 6 and oil seal 7. Ex. 1102, ¶76; Ex. 1103, ¶72.

Kashima discloses a typical suspension fork embodiment shown in Figure 1, wherein *Kashima*'s suspension fork includes lower tubes 1 and upper tubes 2:

Fig. 1



Ex. 1105, FIG. 1.

Gas within *Kashima's* outer tube **1** may be purged by filling the outer tube **1** mostly with oil and then depressing the inner tube **2** into the outer tube **1**. Once oil begins to run from the threaded hole **5**, it may then be capped with a setscrew **6** that carries an oil seal **7**, thereby sealing in the oil within that space. Ex. 1102, ¶¶77-78; Ex. 1103, ¶¶73-74; Ex. 1105, FIG. 1.

The same functionality may be provided by *Bruckbauer's* pressure relief valve **10**. *Bruckbauer's* pressure relief valve **10** may be directly screwed into

Kashima's threaded hole **5**, as *Bruckbauer* is intended to replace prior art screws that were previously used for purging fluids through holes in suspension forks. Ex. 1106, 1:38-47, 2:14-20. The advantages of such a substitution are centered around the convenience of a push-button device that requires no tools, as well as *Bruckbauer's* pressure relief valve's **10** ability to remain free of contamination during use. Ex. 1102, ¶79; Ex. 1103, ¶75; Ex. 1106, 1:38-47, 2:14-20. When substituted into *Kashima's* threaded hole **5**, *Bruckbauer's* pressure relief valve **10** allows the user to equalize any pressure built up between the outer tube **1** and the inner tube **2** during assembly or maintenance by merely pressing *Bruckbauer's* cap **36**. Ex. 1102, ¶80; Ex. 1103, ¶76.

The combination of *Kashima* and *Bruckbauer* would merely be the combination of known prior art elements (*Kashima's* typical vehicle suspension fork and *Bruckbauer's* known pressure relief valve **10**) according to known methods (*Bruckbauer's* known pressure relief valve **10** may directly screw into *Kashima's* threaded hole **5**). The combination of *Kashima* and *Bruckbauer* would merely be a simple substitution of one known element (*Bruckbauer's* known pressure relief valve **10**) for another (*Kashima's* setscrew **6** and oil seal **7**). A POSITA would expect the combination to yield and obtain easily predictable results (that *Bruckbauer's* pressure relief valve **10** would allow for push-button opening and

closing of the threaded hole 5), at least because each element in the combination is being incorporated and used as intended. Ex. 1102, ¶81; Ex. 1103, ¶77; Ex. 1105, FIG. 1; Ex. 1106, FIG. 1. In addition, mechanical arts like those discussed in *Kashima* and *Bruckbauer* have previously been found to be predictable. See, e.g., *Cedarapids, Inc. v. Nordberg, Inc.*, 121 F.3d 727 (Fed. Cir. 1997).

4. **It would have been obvious to a POSITA to modify *Kashima* or *Kashima* (alone or in view of *Bruckbauer*) with *Danter's* die-cast procedure, thereby yielding the subject matter of Claims 5-6.**

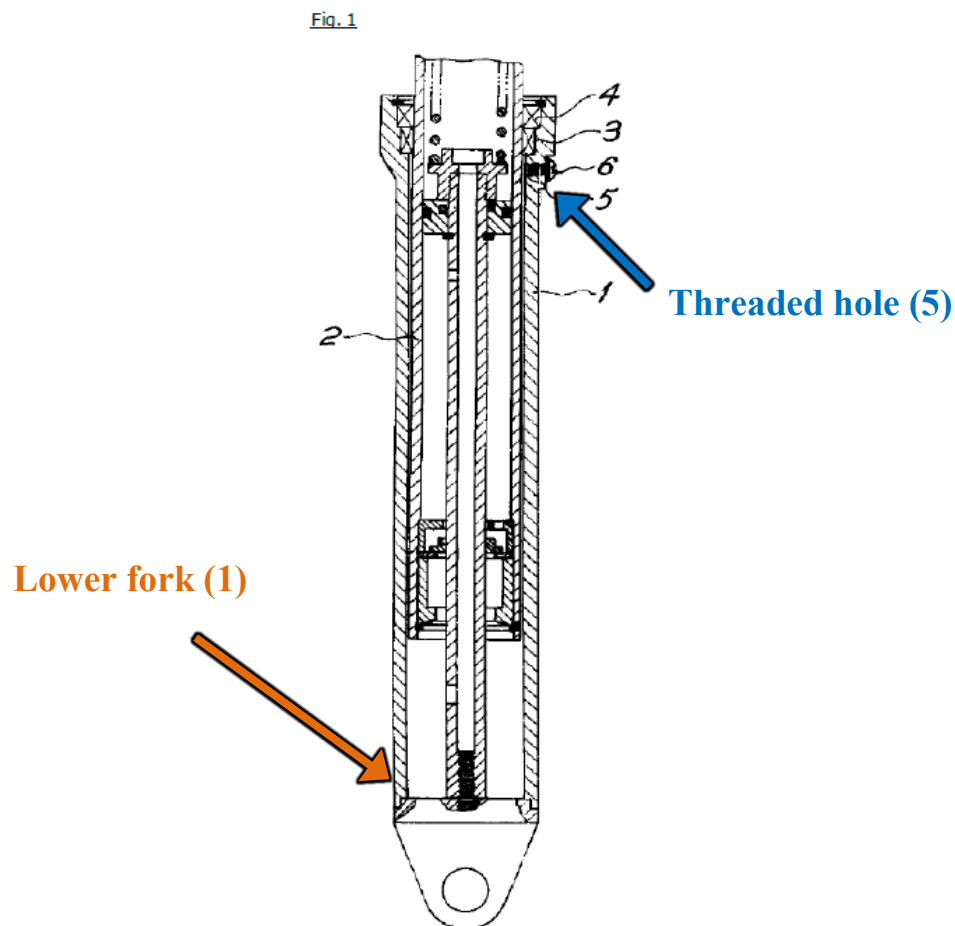
A POSITA would straightforwardly modify *Kashima's* typical lower fork 1 to incorporate *Danter's* method of forming “leg portions of the front suspension fork member” using a “cast[ing process] from a suitable metal such as steel or aluminum alloy[.]” Ex. 1107, 4:18-20. A POSITA would have been motivated to improve *Kashima* (or *Kashima* in view of *Bruckbauer*) by using *Danter's* casting process at least because casting was a common and known technique; forks were known devices; and it was predictable that fork legs could be made via casting. It would have been obvious to try casting *Kashima's* lower fork 1, and a POSITA would have been motivated to use die-casting to benefit from the reliability and low-costs associated with such methods. Ex. 1102, ¶82; Ex. 1103, ¶78.

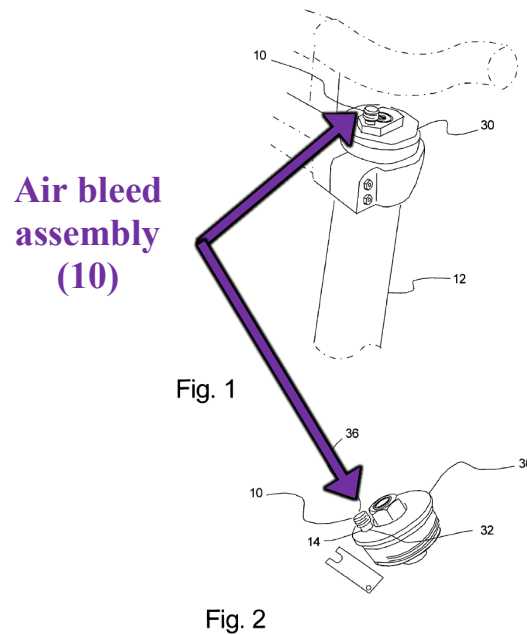
5. Independent Claim 1

The combination of *Kashima* and *Bruckbauer* has all elements of claim 1, with *Kashima*'s setscrew **6** and oil seal **7** substituted for *Bruckbauer*'s pressure relief valve **10**. Ex. 1102, ¶107; Ex. 1103, ¶103; Ex. 1106, FIG. 1; Ex. 1105, FIG. 1.

(a) Claim 1 ``` [pre] ```

Kashima in view of *Bruckbauer* discloses *Kashima*'s lower fork **1**, and *Bruckbauer*'s air bleed assembly **10** (with *Kashima*'s threaded hole **5**). Ex. 1102, ¶108; Ex. 1103, ¶104; Ex. 1105, FIG. 1; Ex. 1106, FIGS. 1-4.





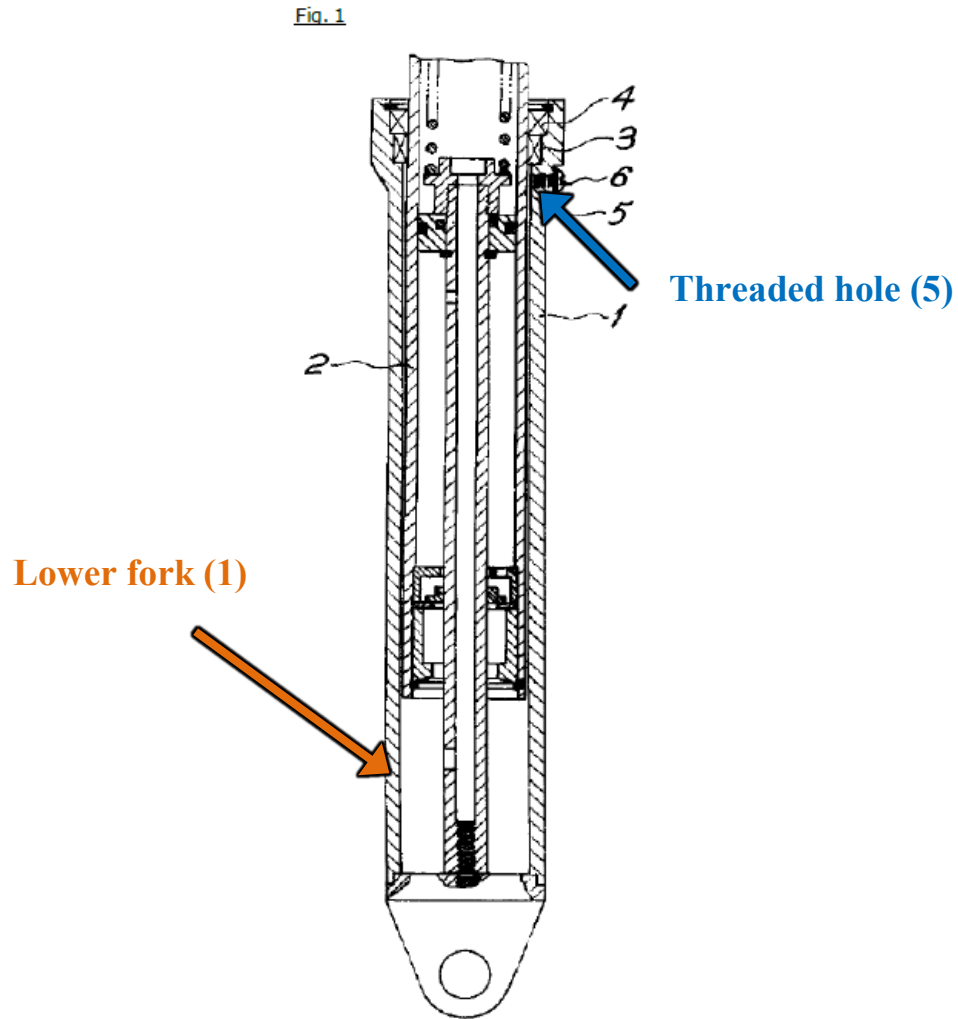
(b) Claim 1[a]–Claim 1[c]

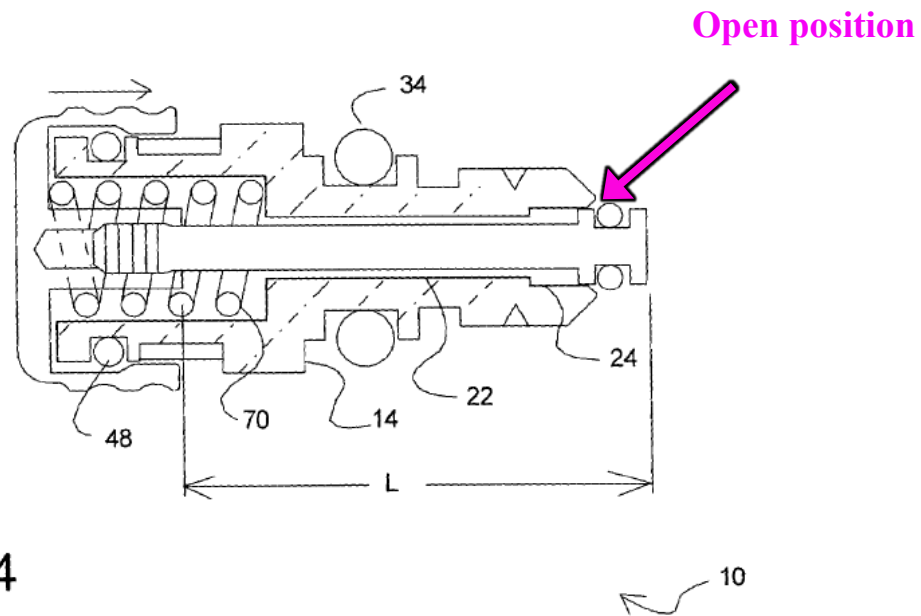
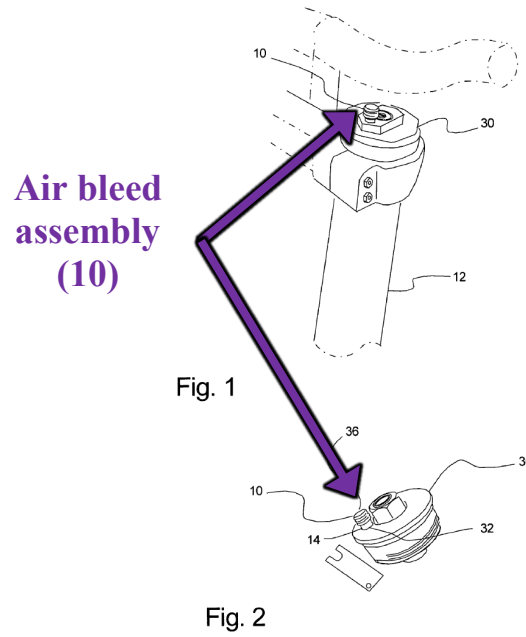
Kashima discloses all elements of these limitations, as discussed above.

(c) Claim 1[d]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s pressure relief valve **10** and *Kashima*'s threaded hole **5** as an air bleed assembly (purple arrow) disposed on *Kashima*'s lower fork tube **1** at *Kashima*'s threaded hole **5**. This air bleed assembly is configured for equalizing ambient pressure within the lower fork **1**. When *Bruckbauer*'s valve cap **36** is depressed, gas may travel through *Bruckbauer*'s pressure relief valve **10** while it is in an open position (pink arrow), as illustrated in Figure 4, and the air pressure within the lower fork **1** will equalize with the ambient

air pressure. Ex. 1102, ¶112; Ex. 1103, ¶108; Ex. 1105, FIG. 1; Ex. 1106, FIGS. 1-4.





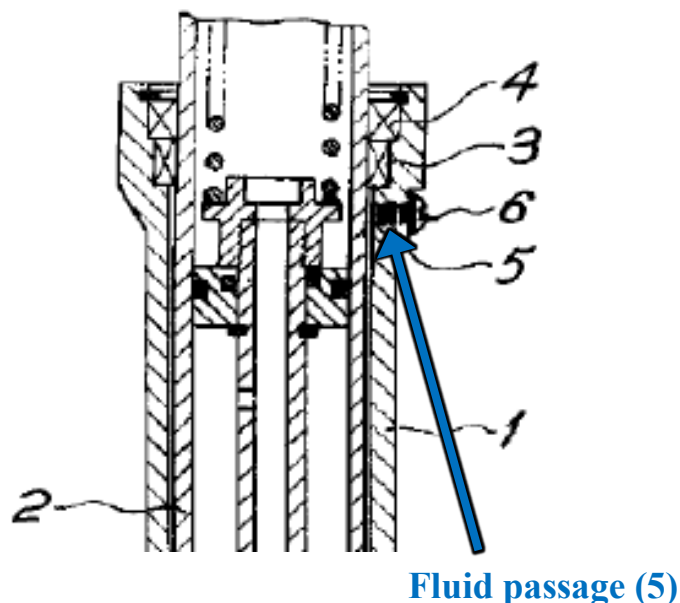
(d) Claim 1[e]

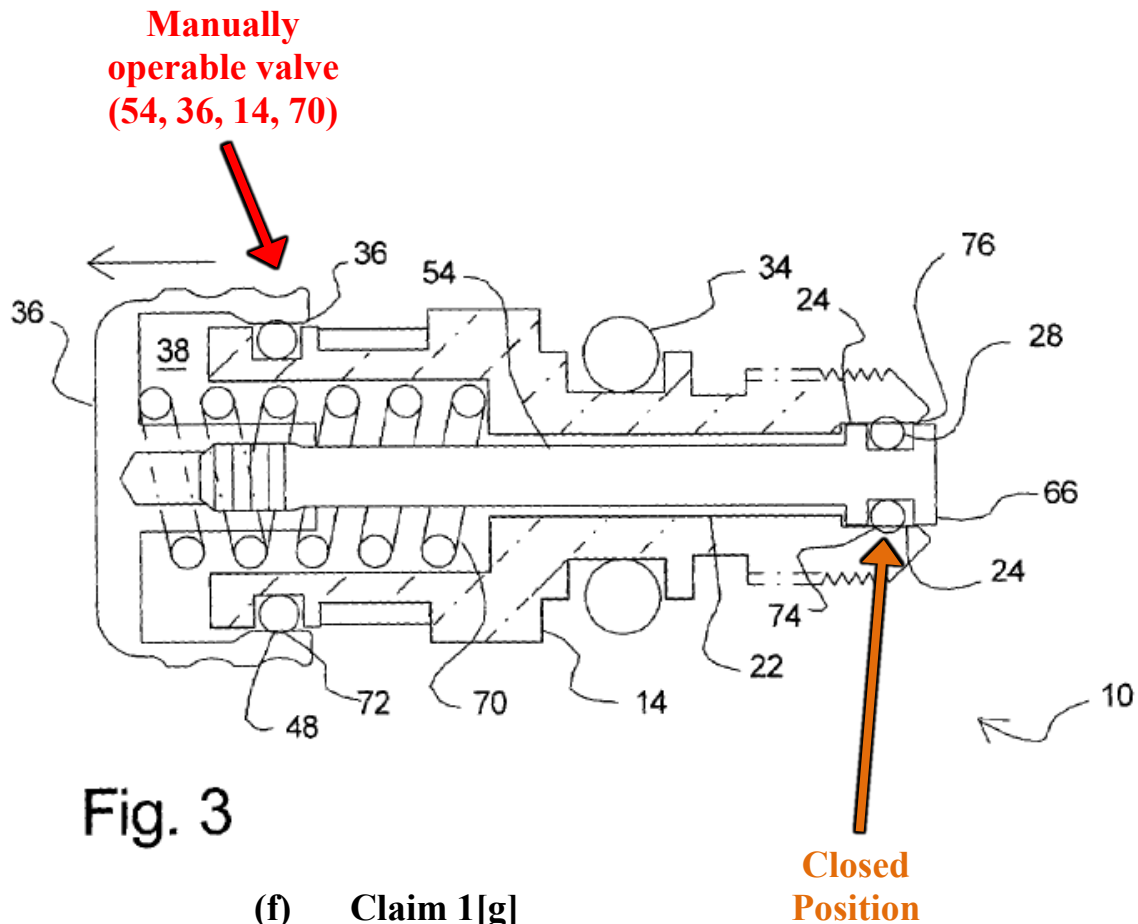
Kashima in view of *Bruckbauer* discloses all elements of this limitation, as discussed above.

(e) Claim 1[f]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s manually operable valve **54, 36, 14, 70** (red arrow) located in *Kashima*'s lower fork **1** is coupled to *Kashima*'s fluid passage **5** (blue arrow). *Bruckbauer*'s manually operable valve **54, 36, 14, 70** has a first position substantially closing the fluid passage (orange arrow, *Bruckbauer*'s Figure 3) and a second position (pink arrow, above, *Bruckbauer*'s Figure 4) allowing a fluid to flow between the interior and the exterior of *Kashima*'s lower fork **1**. Ex. 1102, ¶114; Ex. 1103, ¶110; Ex. 1105, FIG. 1; Ex. 1106, FIGS. 1-4.

Fig. 1





Kashima in view of *Bruckbauer* discloses *Kashima's* fluid passage 5 and *Bruckbauer's* manually operable valve 54, 36, 14, 70 are located at a distance from an oil bath lubrication within the lower fork 1. This positioning of the valve results in a configuration wherein when the manually operable valve is in the second position (open position), most if not all of the oil bath lubrication remains within the lower fork 1 because the valve is positioned near the top of the lower fork 1 and can be closed once oil begins to leak. *See* Ex. 1105, [04], FIG. 1. Any gas within the lower fork 1 will be equalized with ambient air pressure when the valve is opened,

while the oil will remain in the oil bath lubrication space within the lower fork 1. Ex. 1102, ¶115; Ex. 1103, ¶111; Ex. 1105, FIG. 1; Ex. 1106, FIGS. 1-4.

6. Dependent Claim 2

Kashima discloses all elements of this claim, as discussed above.

7. Dependent Claim 3

(a) Claim 3[pre] and Claim 3[a]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s valve activator 54, 36 (pink arrow) coupled with *Bruckbauer*'s manually operable valve 54, 36, 14, 70. Ex. 1102, ¶117-118; Ex. 1103, ¶113-114; Ex. 1106, FIG. 3-4.

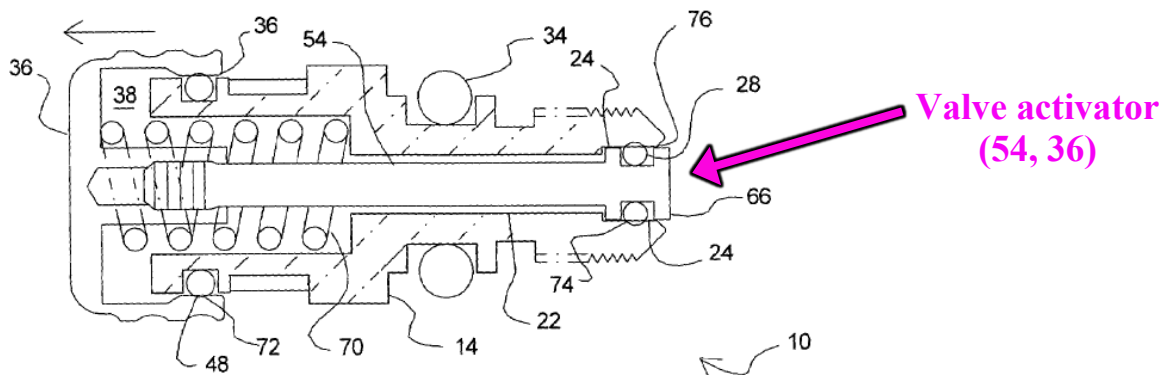


Fig. 3

(b) Claim 3[b]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s valve activator 54, 36 includes an activation position where the manually operable valve 54, 36, 14, 70 is in an open position (orange arrow). *Kashima* in view of *Bruckbauer*'s valve cap 36, connecting shaft 56, and hollow body 14 include a spaced-apart relationship where

a gas may travel through the manually operable valve. Ex. 1102, ¶119; Ex. 1103, ¶115; Ex. 1106, 5:3-9, FIG. 4.

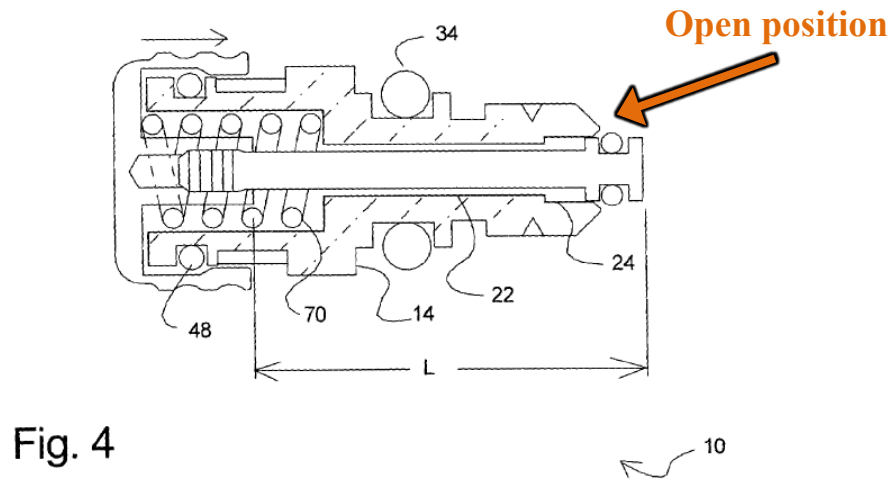


Fig. 4

(c) Claim 3[c]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s valve activator 54, 36 includes a deactivation position where the manually operable valve 54, 36, 14, 70 is in a closed position (orange arrow). *Kashima* in view of *Bruckbauer*'s valve cap 36, connecting shaft 56, and hollow body 14 include a biased position where a gas may not travel through the manually operable valve. Ex. 1102, ¶120; Ex. 1103, ¶116; Ex. 1106, 5:23-28, FIG. 3.

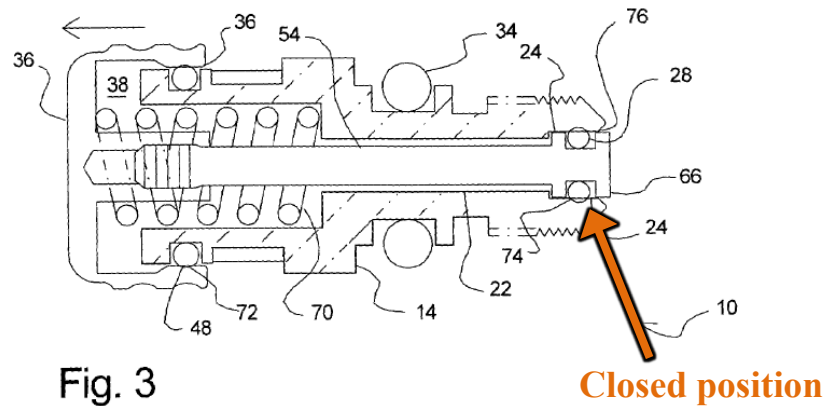


Fig. 3

8. Dependent Claim 4

Kashima in view of *Bruckbauer* discloses *Bruckbauer's* valve activator 54, 36 includes a button 36 (blue arrow) to select the activation position and the deactivation position. Ex. 1102, ¶121; Ex. 1103, ¶117; Ex. 1106, 5:3-28, FIG. 3.

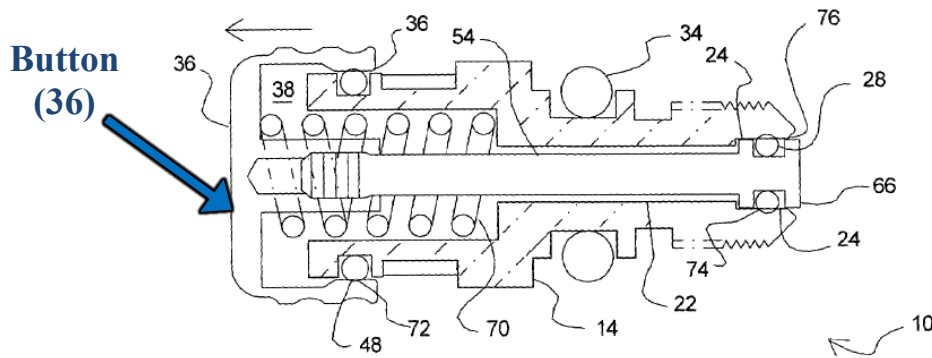


Fig. 3

9. Dependent Claim 5

Kashima in view of *Bruckbauer* discloses *Bruckbauer's* manually operable valve 54, 36, 14, 70 fixed into a passage 5 through the body of *Kashima's* lower fork 1, which passage 5 would be formed on a die-cast feature of *Kashima's* lower

fork **1**. Ex. 1106, 5:3-28. The structures of *Kashima*'s lower fork **1** do not differ from those made by die-casting, and this die-casting limitation (which lacks patentable weight) cannot distinguish claim 5 from *Kashima* in view of *Bruckbauer*. See *Kamstrup A/S*, 43 F.4th at 1382–83. See also Ex. 1102, ¶122; Ex. 1103, ¶118. Alternatively, it would have been obvious to a POSITA to modify *Kashima* (or *Kashima* in view of *Bruckbauer*) to form *Kashima*'s lower fork **1** using a die-cast procedure disclosed in *Danter*, as discussed above. See Ex. 1102, ¶¶82, 123; Ex. 1103, ¶¶78, 119.

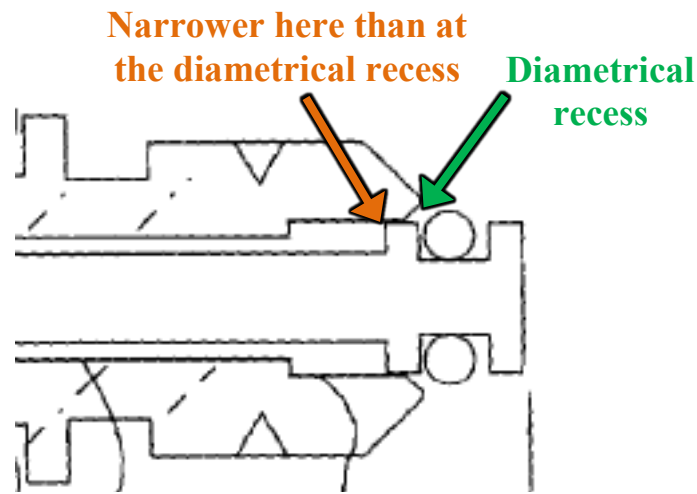
10. Dependent Claim 6

(a) Claim 6[pre]

Kashima in view of *Bruckbauer* discloses *Kashima*'s lower fork **1** and *Bruckbauer*'s air bleed assembly **10** (in addition to *Kashima*'s related fluid passage **5**). Ex. 1102, ¶124; Ex. 1103, ¶120.

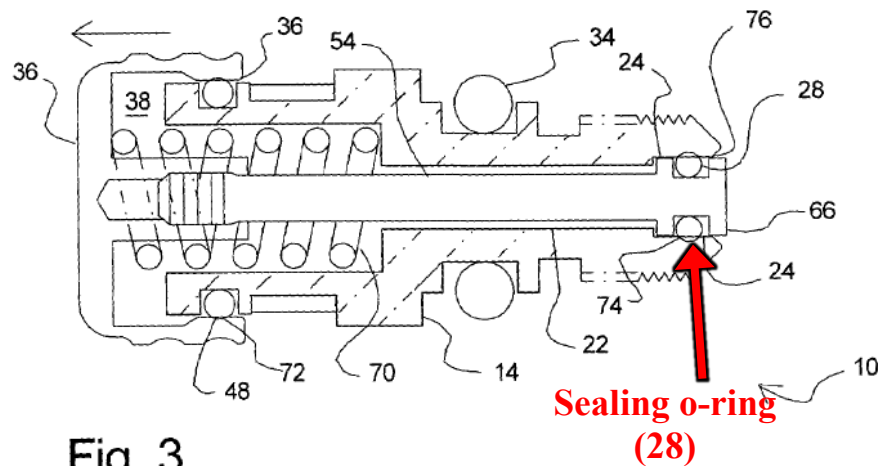
(b) Claim 6[a]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s diametrical recess (green arrow), in that the inner bore diameter is larger at the green arrow than at the orange arrow. Ex. 1102, ¶125; Ex. 1103, ¶121; Ex. 1106, FIG. 4.



(c) Claim 6[b]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s sealing o-ring **28** (red arrow). Ex. 1102, ¶126; Ex. 1103, ¶122; Ex. 1106, FIG. 3.



(d) Claim 6[c]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s sealing o-ring **28** (red arrow) having a sealed position. Ex. 1102, ¶127; Ex. 1103, ¶123; Ex. 1106, FIG. 3.

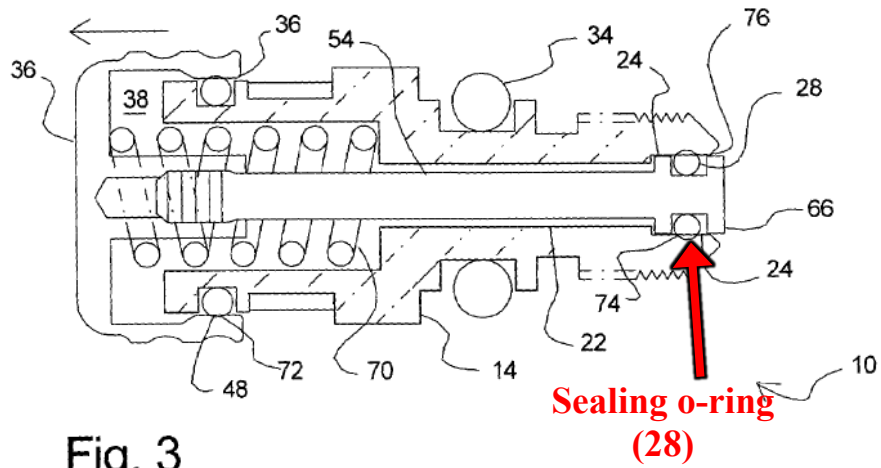


Fig. 3

(e) Claim 6[d]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s sealing o-ring 28 (red arrow, above) having an unsealed position. Ex. 1102, ¶128; Ex. 1103, ¶124; Ex. 1106, FIG. 4.

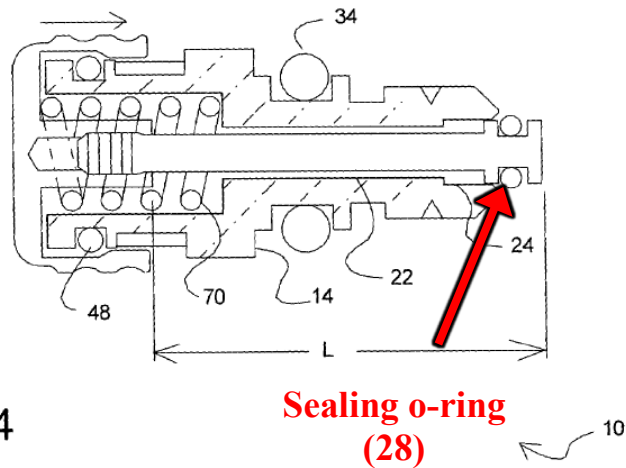
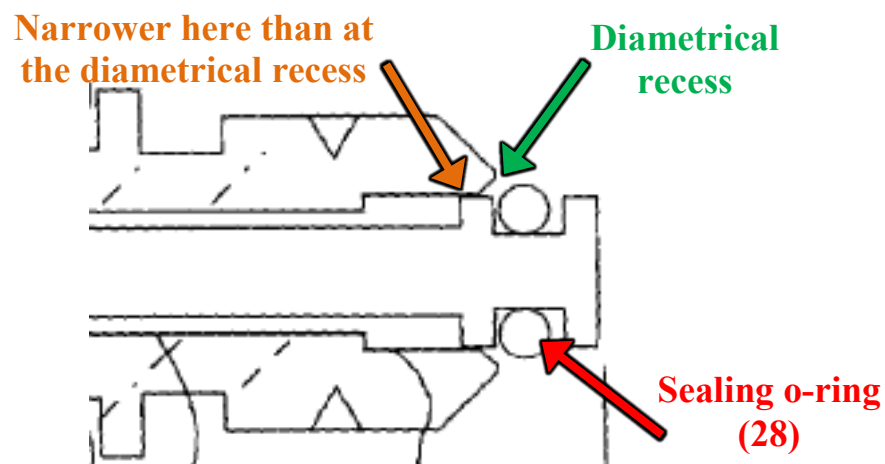


Fig. 4

(f) Claim 6[e]

Kashima in view of *Bruckbauer* discloses *Bruckbauer*'s sealing o-ring 28 (red arrow) having a sealed position and an unsealed position wherein the sealed position

seals against air leaks from *Kashima's* lower fork **1** through the die-cast feature, whereupon when *Bruckbauer's* valve activator **54, 36** is moved from the activation position to the deactivation position, the sealing o-ring **28** moves further into the diametrical recess (green arrow), thereby attaining the unsealed position and letting air pressure by-pass into or out of *Kashima's* lower fork **1** via the vent hole **5**. Ex. 1102, ¶129; Ex. 1103, ¶125; Ex. 1106, FIGS. 3, 4.



11. Dependent Claim 7

Kashima in view of *Bruckbauer* discloses *Bruckbauer's* manually operable valve **54, 36, 14, 70** includes a spring **70** (orange arrow) coupled to the valve activator **54, 36** (pink arrow), which spring **70** biases the valve activator **54, 36** toward the first (closed) position. Ex. 1102, ¶130; Ex. 1103, ¶126; Ex. 1106, 5:23-46, FIG. 4.

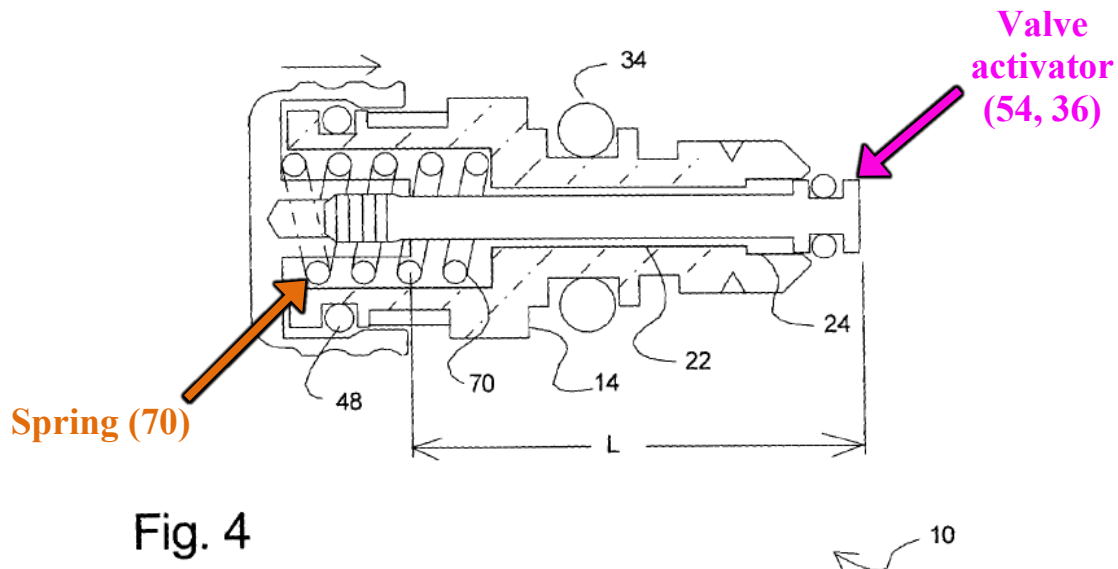
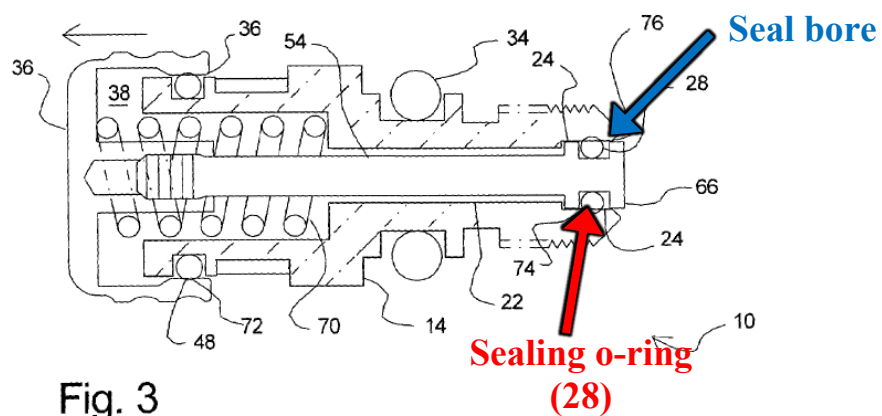


Fig. 4

12. Dependent Claim 8

Kashima in view of *Bruckbauer* discloses *Bruckbauer's* manually operable valve **54, 36, 14, 70** has a second position having a sealing engagement between the sealing o-ring **28** (red arrow) and a seal bore (blue arrow), wherein when in the sealing engagement, trapped air pressure does not bypass into or out of *Kashima's* lower fork **1**. Air flow through the manually operable valve **54, 36, 14, 70** may be sealed by squeezing the internal o-ring **28** into the entrance of the aperture at the end of the hollow body **14** when the valve cap **36** is moved into the closed position, thereby preventing entry of dirt, water, or other foreign substances from entering *Kashima's* lower fork **1**. Ex. 1102, ¶131; Ex. 1103, ¶127; Ex. 1106, 5:23-46, FIG. 3.

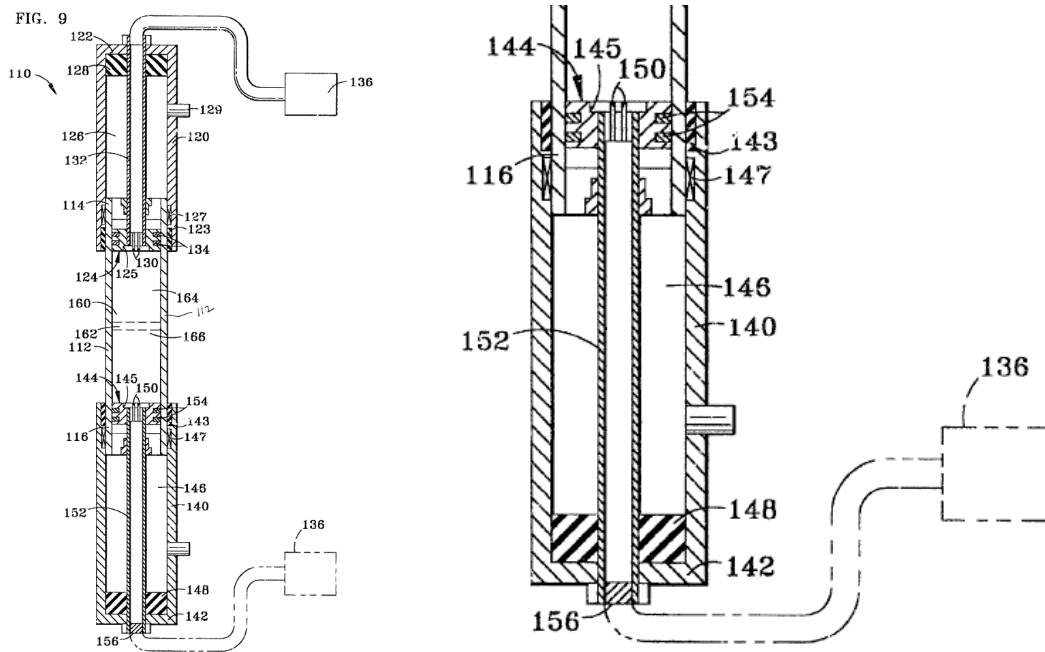


C. Ground III: Claims 1 and 2 Are Anticipated Under 35 U.S.C. § 102 by *Hoose*.

1. *Hoose* discloses an air bleed assembly on a vehicle suspension fork located near the top of the suspension fork's lower fork.

U.S. Patent No. 6,371,263 B1 to Hoose ("*Hoose*") is prior art under pre-AIA 35 U.S.C. § 102(b), having been filed on October 20, 1999 and issued on April 16, 2002. Ex. 1108.

Hoose discloses "a two-wheeled vehicle suspension having two shock absorbing systems independently operable between a two-wheeled vehicle's frame and wheel." Ex. 1108, 1:13-15. The two-wheeled vehicle may be at least a bicycle or a motorcycle, and may be used for either a front suspension fork or a rear suspension. Ex. 1108, 3:12-20. *Hoose*'s Figure 9 provides some details of an embodiment of *Hoose*'s suspension fork **110**:



Ex. 1108, FIG. 9; Ex. 1102, ¶65; Ex. 1103, ¶61.

As shown in Figure 9, *Hoose's* suspension fork **110** includes a shock tube **112** that is an upper fork to the housing **140**, which is a lower fork. The upper tube **112** moves telescopically within the lower fork **140**. Ex. 1108, 5:63-6:10. A seal **143** is located at one end of the lower fork **140**, adjacent to a bearing **147**, which bearing **147** is a bushing. Ex. 1102, ¶66; Ex. 1103, ¶62; Ex. 1108, 5:63-6:10.

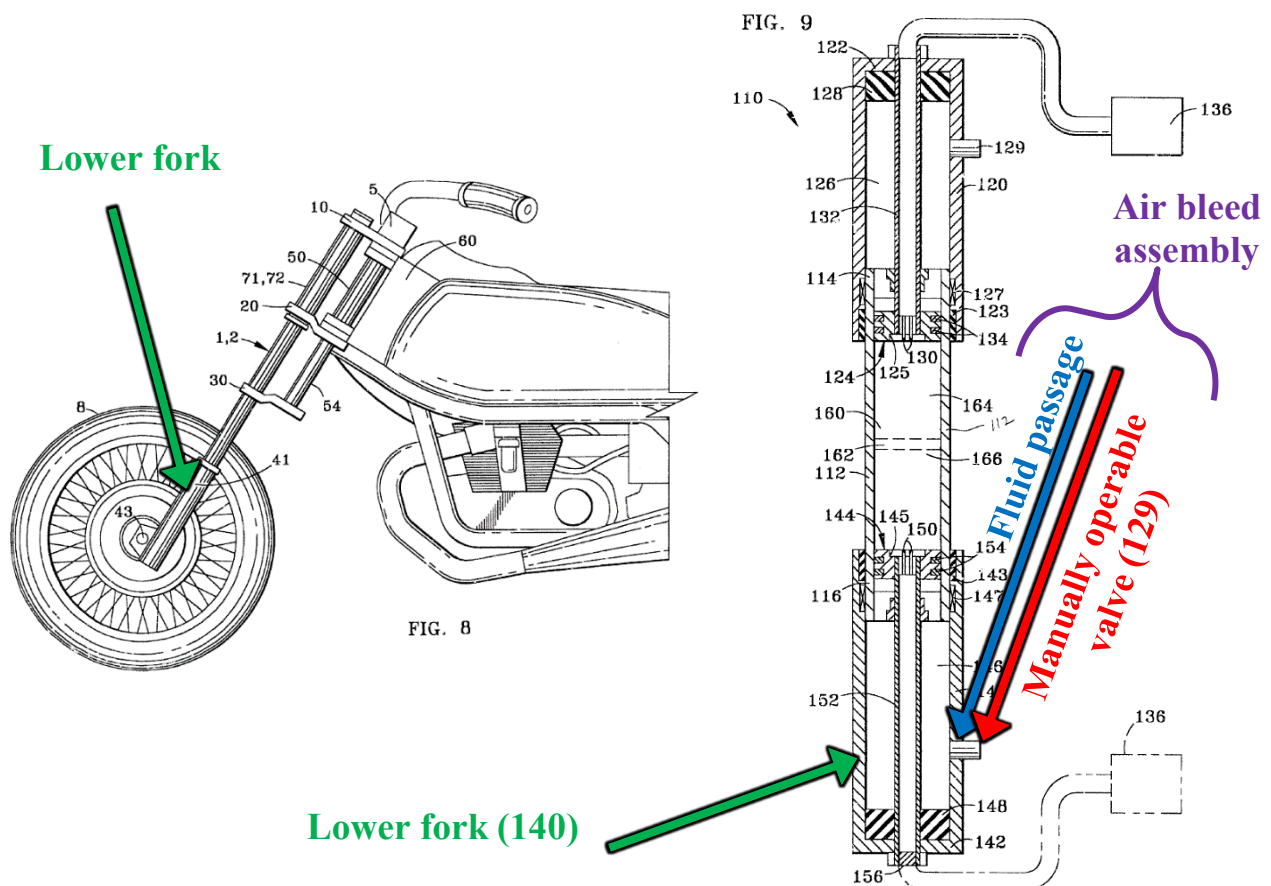
A valve **129** may be used to pressurize or depressurize the shock chamber **146** created between the inner upper fork **112** and the outer lower fork **140**. Ex. 1108, 6:21-25. Along with a gas for pressurization, *Hoose's* shock chamber **146** may include an oil bath. Additionally, a stem portion **152** that extends through the shock chamber **146** may be filled with an oil. Ex. 1108, 6:21-25, 6:51-7:4. When *Hoose's*

valve **129** is opened, the shock chamber **146** will be in fluid communication with the ambient air, and the gas pressure within the shock chamber **146** will equalize with the ambient air pressure. Ex. 1102, ¶66; Ex. 1103, ¶62.

2. Independent Claim 1

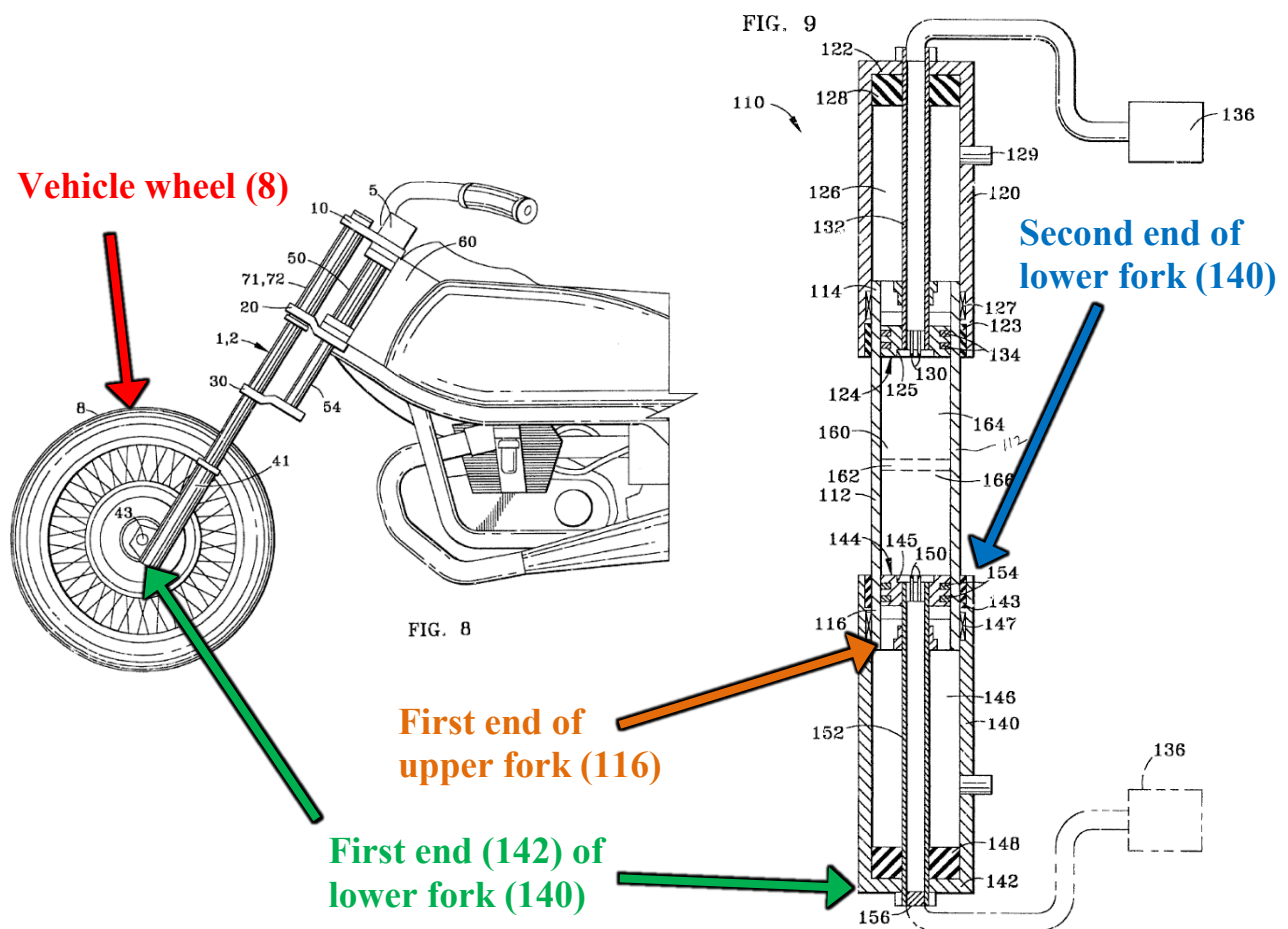
(a) Claim 1[pre]

Hoose discloses a lower fork **140** (green arrows) including an air bleed assembly (purple). Ex. 1102, ¶132; Ex. 1103, ¶128; Ex. 1108, FIGS. 8-9.



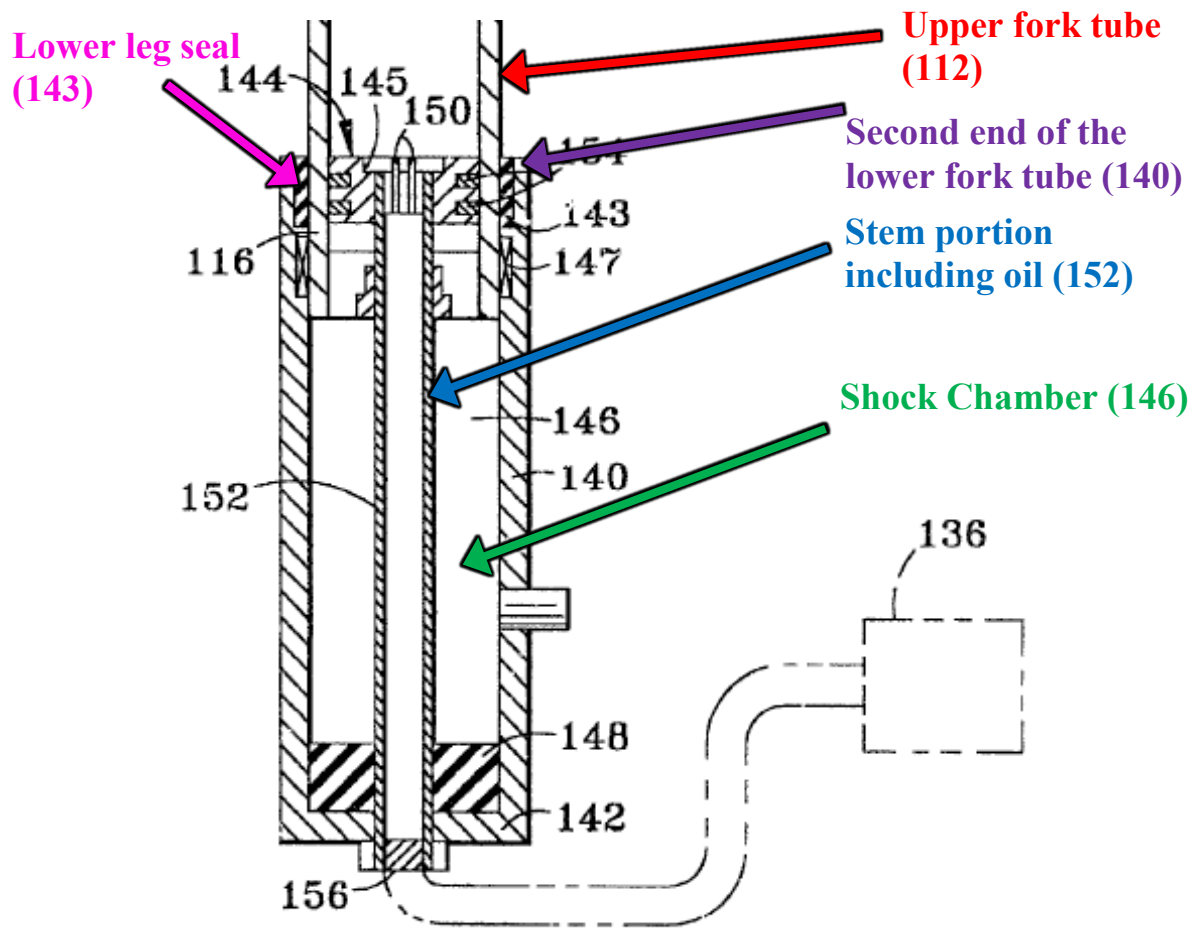
(b) Claim 1[a]

Hoose discloses a lower fork **140** configured to have a first end **142** (green arrows) coupled to a vehicle wheel **8** (red arrow), and a second end (blue arrow) configured to be telescopically engaged with a first end **116** (orange arrow) of an upper fork **112**. Ex. 1102, ¶133; Ex. 1103, ¶129; Ex. 1108, FIGS. 8-9.



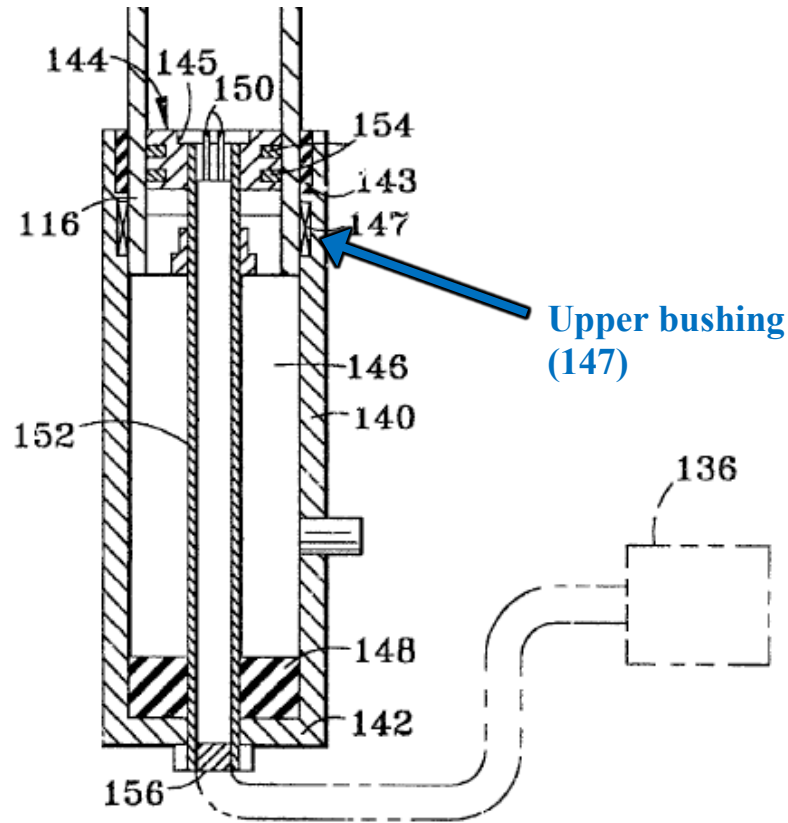
(c) **Claim 1[b]**

Hoose discloses a lower leg seal **143** (pink arrow) located at an outermost edge of the second end (purple arrow) of the lower fork tube **140**, the lower leg seal **143** configured for sealing closed a gap disposed between the upper fork tube **112** (red arrow) and the lower fork tube **140** when the lower fork **140** is telescopically engaged with the first end **116** of the upper fork **112** (red arrow), thereby preventing an oil bath lubrication occupying an area within the lower fork tube **140** at a first end **142** of the lower fork tube **140** from leaking from the lower fork **140**. *Hoose* explains that the stem portion **152** (blue arrow) and shock chamber **146** (green arrow) may be filled with oil. Ex. 1102, ¶134; Ex. 1103, ¶130; Ex. 1108 at 6:21-25, 6:51-7:4, FIG. 9.



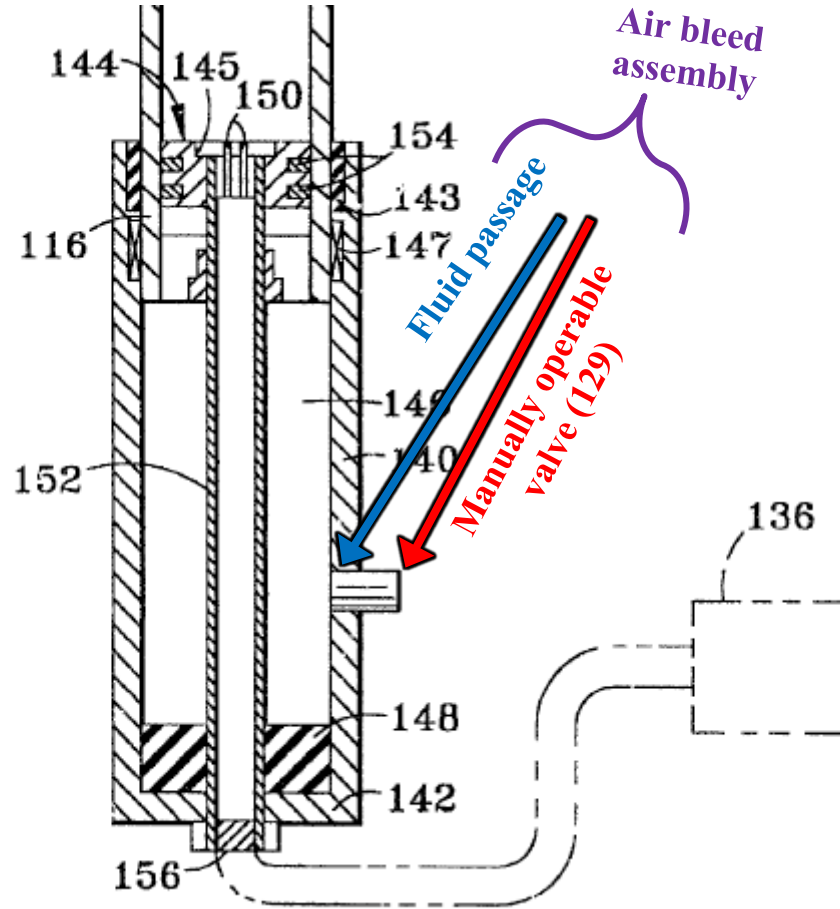
(d) Claim 1[c]

Hoose discloses an upper bushing **147** (blue arrow) attached to and positioned adjacent to the lower leg seal **143**. Ex. 1102, ¶135; Ex. 1103, ¶131; Ex. 1108, FIG. 9.



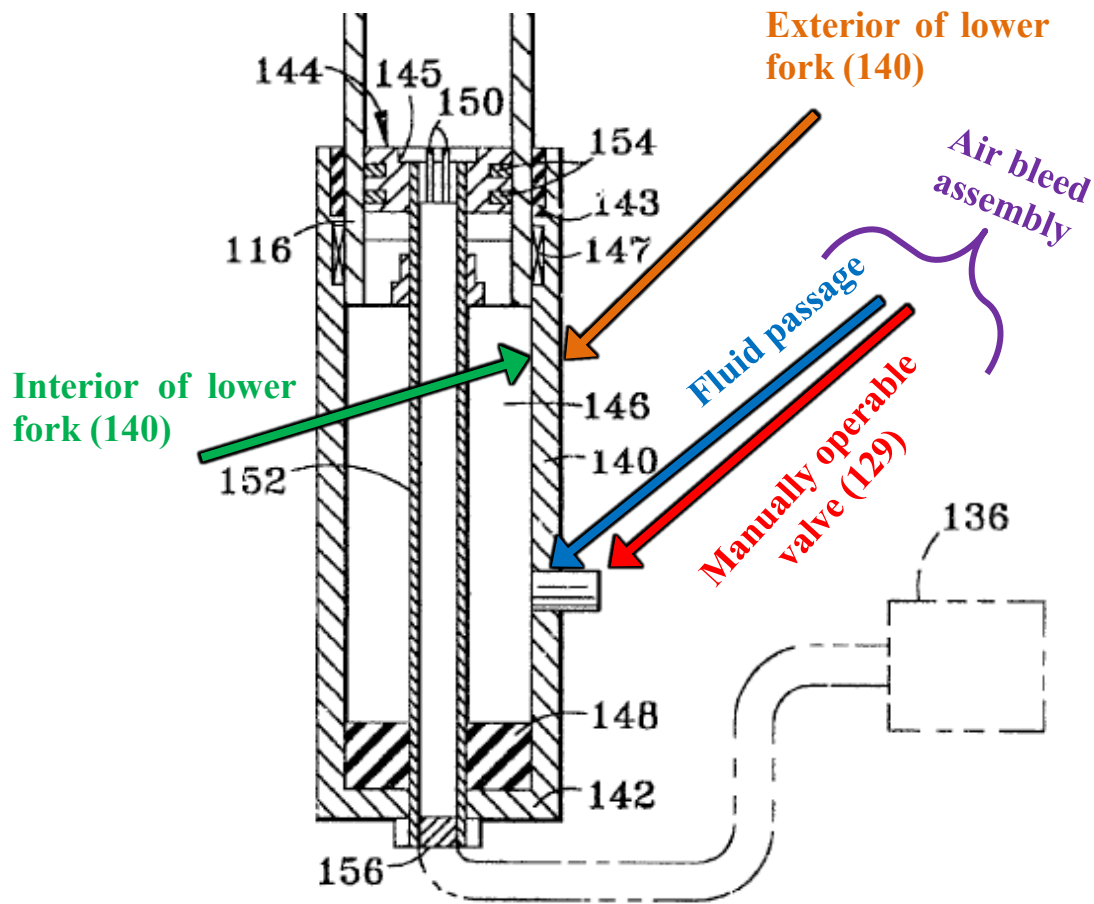
(e) Claim 1[d]

Hoose discloses an air bleed assembly (purple) disposed on the lower fork tube **140** that is configured for equalizing ambient pressure within the lower fork **140**. When *Hoose*'s valve **129** (red arrow) is open, air pressure within the lower fork **140** equalizes with the ambient air pressure. Ex. 1102, ¶136; Ex. 1103, ¶132; Ex. 1108, FIG. 9.



(f) Claim 1[e]

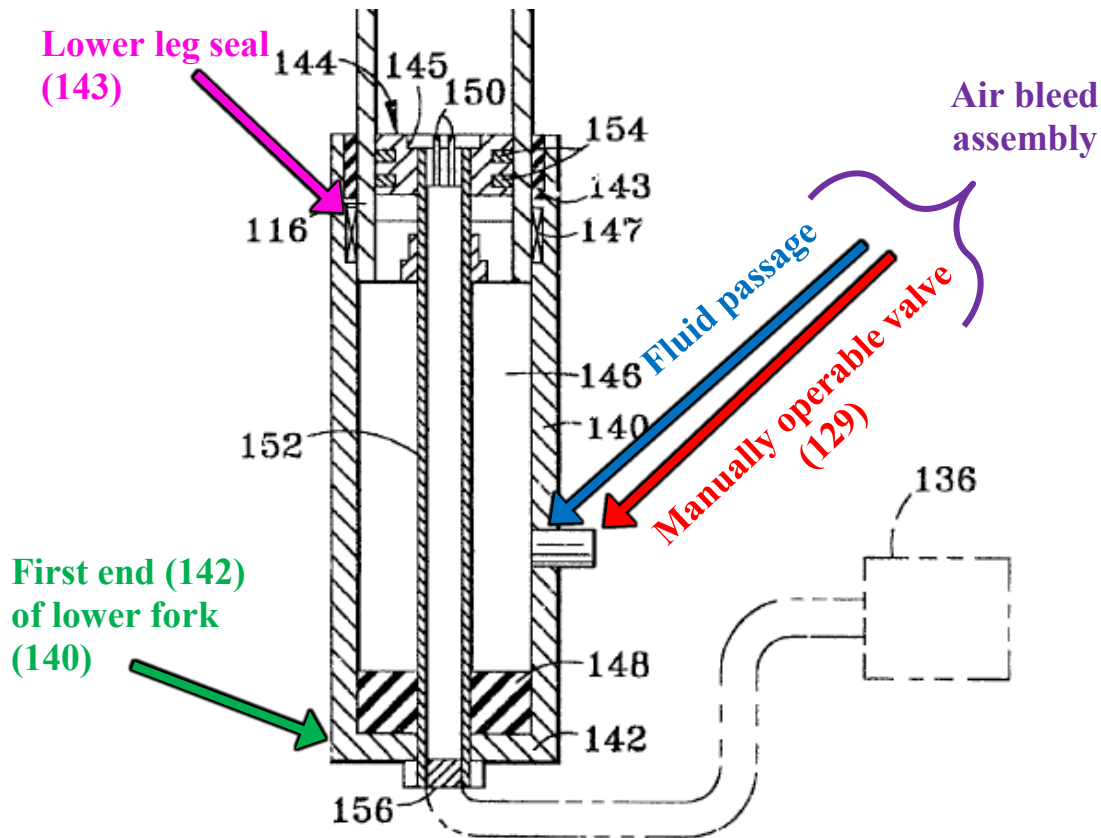
Hoose discloses a fluid passage (blue arrow) disposed between an interior (green arrow) of the lower fork **140** and an exterior (orange arrow) of the lower fork **140**. *Hoose's* fluid passage is the passage for accommodating the illustrated manually operable valve (red arrow). Ex. 1102, ¶137; Ex. 1103, ¶133; Ex. 1108, FIG. 9.



(g) Claim 1[f]

Hoose discloses a manually operable valve **129** (red arrow) located in the lower fork **140** and coupled to the fluid passage (blue arrow). *Hoose*'s manually operable valve **129** has a first position substantially closing the fluid passage (when sealed) and a second position allowing a fluid to flow between the interior and the exterior (when open). *Hoose* has a manually operable valve **129** that may be used to manually pressurize *Hoose*'s shock chamber **126**. *Hoose*'s valve **129** is disposed

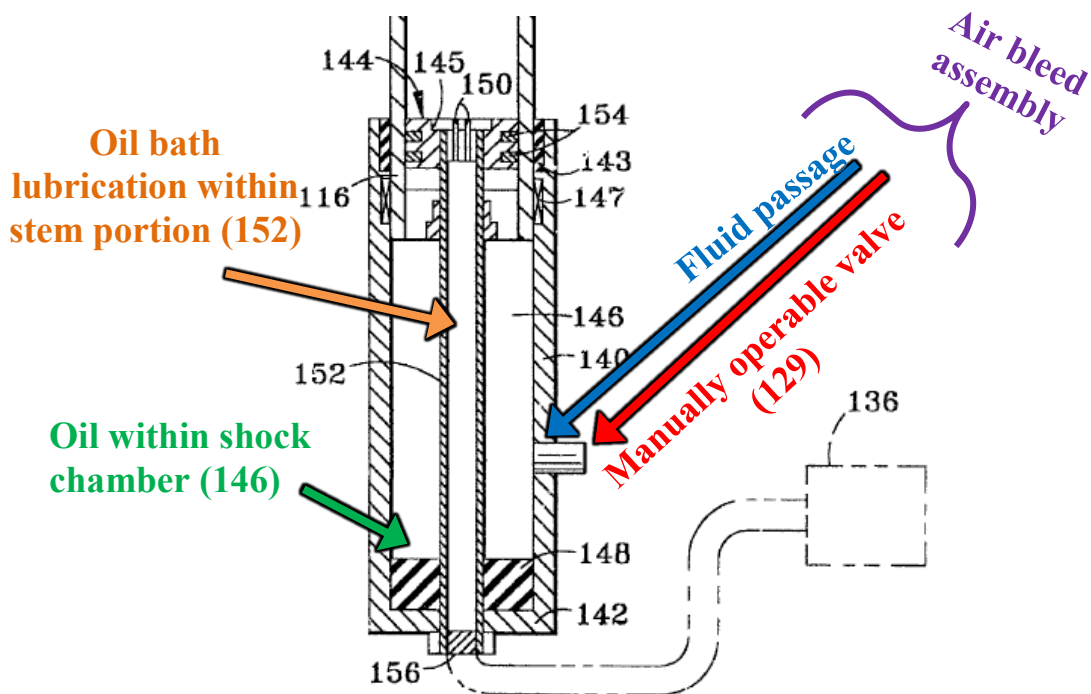
between the lower leg seal **143** and the first end **142** of the lower fork **140**. Ex. 1102, ¶138; Ex. 1103, ¶134; Ex. 1108, FIG. 9.



(h) Claim 1[g]

Hoose discloses a fluid passage (blue arrow) and a manually operable valve **129** (red arrow) located at a distance from an oil bath lubrication (oil within the stem portion **152** or within the chamber **146**) (orange and green arrows) within the lower fork **140**. This positioning of the valve **129** results in a configuration wherein when the manually operable valve **129** is in the second position (open position), most, if not all of the oil bath lubrication within: (A) the stem portion **152** remains within the

¶135; Ex. 1108, FIG. 9.



(i) Dependent Claim 2

Hoose discloses the lower fork **140** and air bleed assembly combination of claim 1. *Hoose* includes air flowing through the fluid passage (blue arrow, above),

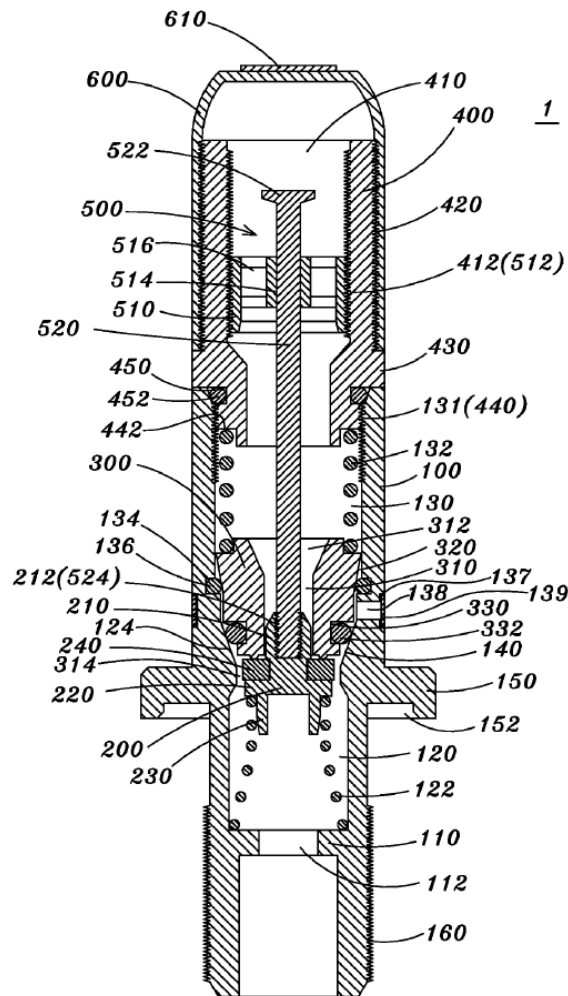
at least when the user allows air to enter into the lower fork **140** via the valve **129** (red arrow, above). Ex. 1102, ¶140; Ex. 1103, ¶136.

D. Ground IV: Claims 1 Through 8 Are Rendered Obvious Under 35 U.S.C. § 103 by *Hoose* in View of *Huang*, and Further in View of *Danter*.

1. *Huang* discloses an air bleed assembly.

U.S. Patent No. 7,624,752 B2 to Huang (“*Huang*”) is prior art under pre-AIA 35 U.S.C. § 102(b), having been filed on November 22, 2006, and issued on December 1, 2009. Ex. 1109.

Huang discloses an air valve **1** having components that “automatically releases surplus high-pressure air when an object is excessively inflated via the inflation valve.” Ex. 1109, 1:6-7, 1:12-19. The valve **1** includes a first valve body **200** holding an airtight washer **240** that seals against a seat of a second valve body **300**. Ex. 1109, 1:57-67, FIGS. 2, 3A. A central pin **520** is connected at one end to the second valve body **300** and at the other end to a diametrically expanded head portion **522**, which portion is a button that may actuate the valve **1**. Ex. 1102, ¶68; Ex. 1103, ¶64; Ex. 1109, 6:10–17, FIGS. 2, 3A.



2. It would have been obvious to a POSITA to modify *Hoose's* air valve with *Huang's* air valve, thereby yielding the subject matter of Claims 3-8.

Combining *Hoose* and *Huang* is straightforward: a POSITA would modify *Hoose* to substitute and improve *Hoose's* air valve **129** with *Huang's* air valve **1**. Ex. 1109, FIGS. 2, 3A. A POSITA would have been motivated to make this simple substitution at least because *Huang's* valve **1** is well-known, relatively inexpensive, and easily operated with manual inputs. Ex. 1109, FIGS. 2 and 3A. The simple

substitution of known elements would have been predictable, as it would have only required screwing in the body of *Huang's* valve **1** into the existing die-cast feature of *Hoose*. A POSITA would have been motivated to improve *Hoose* by using *Huang's* air valve **1** at least because *Huang's* air valve **1** would allow for more convenient air insertion into *Hoose*, when needed. Ex. 1102, ¶83; Ex. 1103, ¶79.

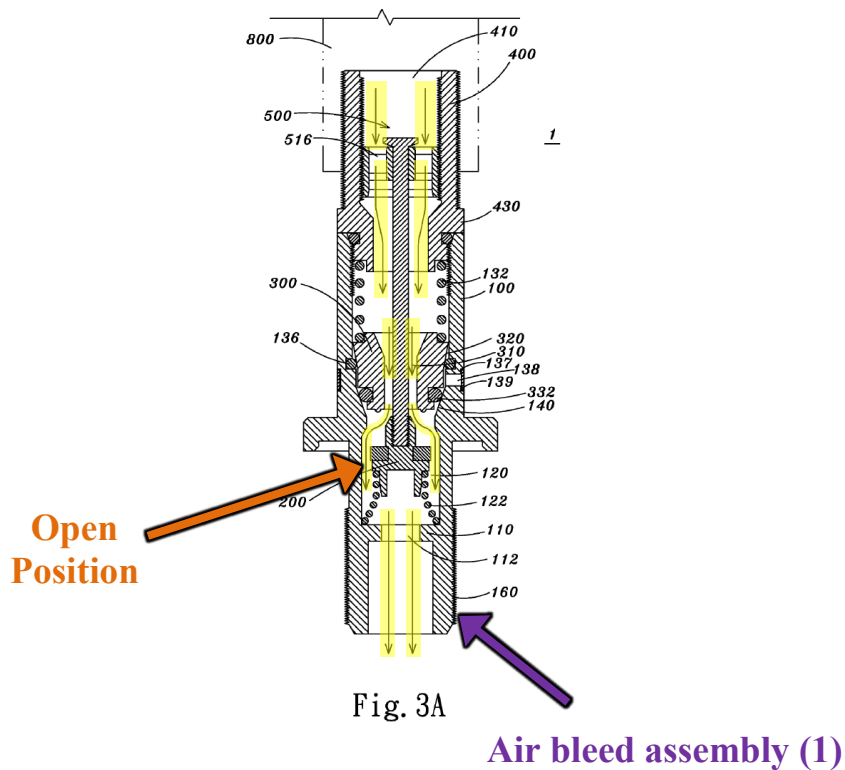
3. It would have been obvious to a POSITA to modify *Hoose* in view of *Huang* with *Danter's* die-cast procedure, thereby yielding the subject matter of claims 5-6.

A POSITA would easily modify *Hoose's* typical lower fork **140** to incorporate *Danter's* die-casting method for the same reasons as set forth above with respect to its combination with *Kashima*. Ex. 1102, ¶84; Ex. 1103, ¶80.

4. Independent Claim 1

(a) Claim 1[pre] – Claim 1[d]

Hoose in view of *Huang* discloses all elements of claim 1[pre] – claim 1[c], and further discloses *Huang's* air bleed assembly **1** (purple) disposed on *Hoose's* lower fork tube **140** at *Hoose's* valve **129**. This air bleed assembly **1** is configured for equalizing ambient pressure within the lower fork **140**. When *Huang's* valve **1** is open, as shown in *Huang's* Figure 3A, the air pressure with the fork **140** equalizes with the ambient air pressure. Ex. 1102, ¶¶141-145; Ex. 1103, ¶¶137-141.



(b) Claim 1[e] and Claim 1[f]

Hoose in view of *Huang* not only discloses all elements of claim 1[e] of this limitation, but further discloses *Huang*'s manually operable valve 1 (red arrow) located in *Hoose*'s lower fork 140 is coupled to *Hoose*'s fluid passage (blue arrow). *Huang*'s manually operable valve 1 has a first position substantially closing the fluid passage (see *Huang*'s Figure 2, below) and a second position allowing a fluid to flow between the interior and the exterior (see *Huang*'s Figure 3A, above). Ex. 1102, ¶¶146-147; Ex. 1103, ¶¶142-143.

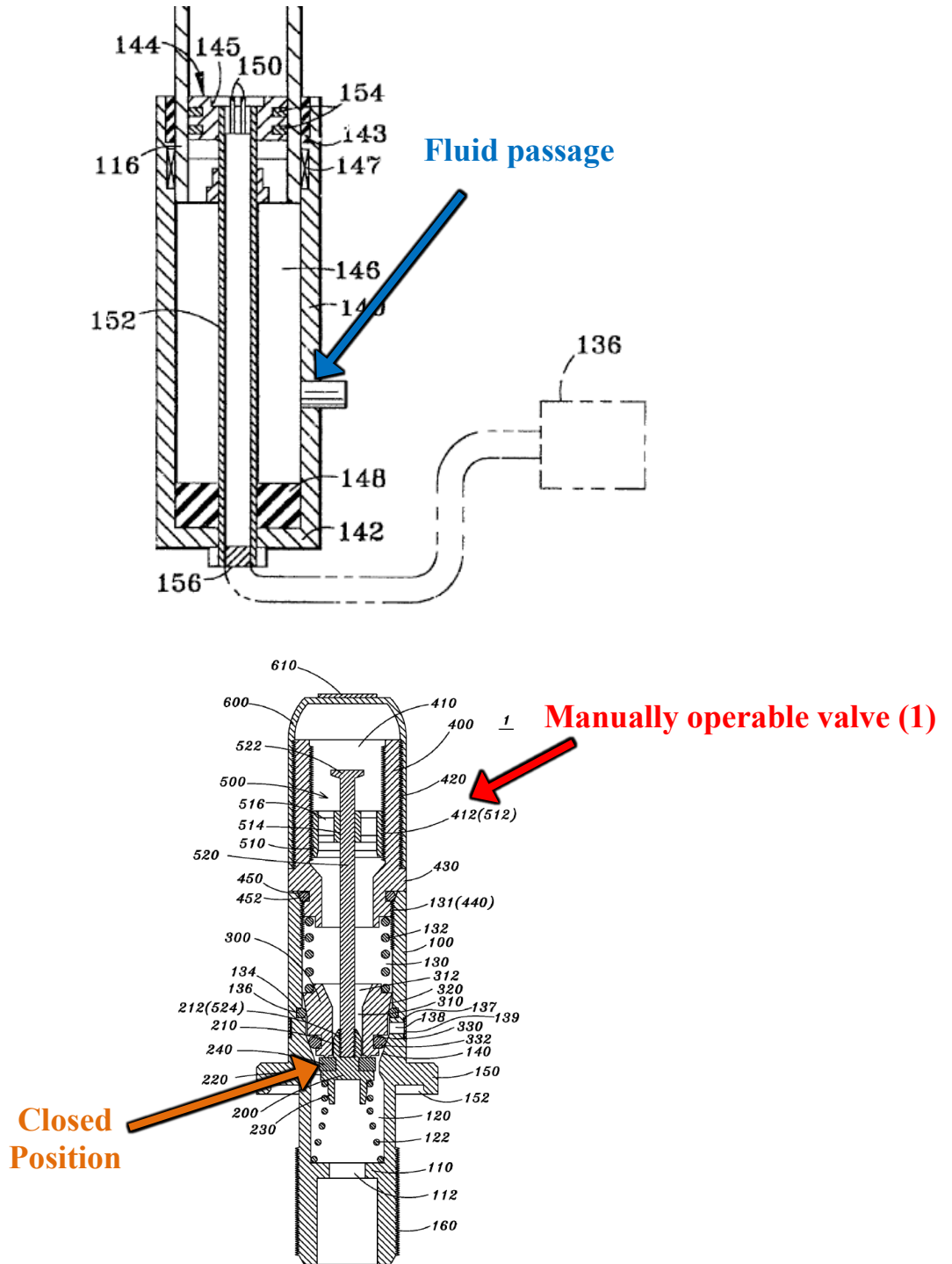


Fig. 2

(c) Claim 1[g]

Hoose in view of *Huang* discloses *Hoose's* fluid passage and *Huang's* manually operable valve **1** are located at a distance from an oil bath lubrication (oil within the stem portion **152** or within the chamber **146**) within the lower fork **140**. This positioning of the valve **1** results in a configuration wherein when *Huang's* manually operable valve **1** is in the second position (open position), most, if not all of the oil bath lubrication within: (A) the stem portion **152** remains within the lower fork **140** because *Huang's* valve **1** is isolated from the oil via the walls of the stem portion **152** and (B) the shock chamber **146** remains within the lower fork **140** because the level of oil is low enough relative to the level of *Huang's* valve **1**, and *Huang's* valve **1** can be closed were any oil to leak. Further, any air within the shock chamber **146** of the lower fork **140** will be equalized to ambient pressure when *Huang's* valve **1** is opened, while the oil will remain in the oil bath lubrication space within the stem portion **152** (orange arrow) and within the chamber **146**. Ex. 1102, ¶148; Ex. 1103, ¶144.

5. Dependent Claim 2

Hoose discloses all elements of this claim, as discussed above.

6. Dependent Claim 3

(a) Claim 3[pre] and 3[a]

In addition to the claim 1 elements, *Hoose* in view of *Huang* discloses *Huang's* valve activator **520, 522** (pink arrows) coupled with the manually operable valve **1** (and *Hoose's* related fluid passage). Ex. 1109, FIGS. 2, 3A; Ex. 1108, FIG. 9; Ex. 1102, ¶¶150-151; Ex. 1103, ¶¶146-147.

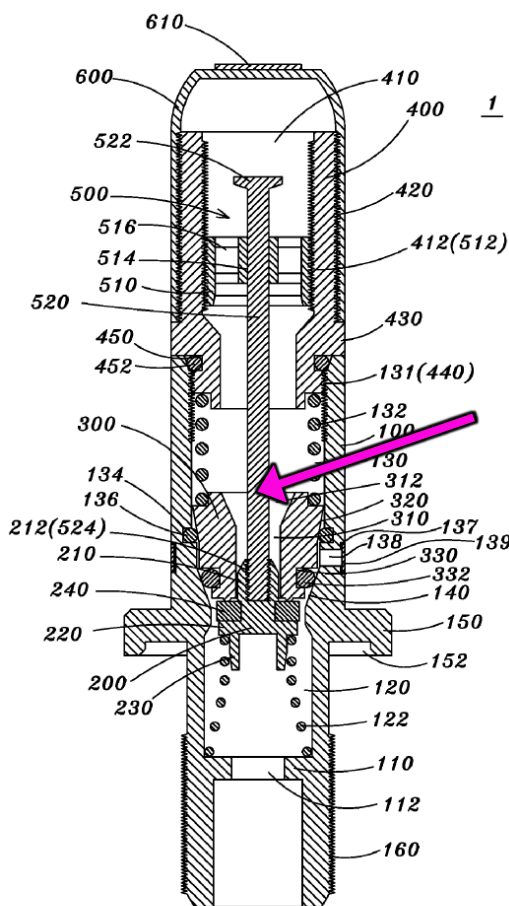


Fig. 2

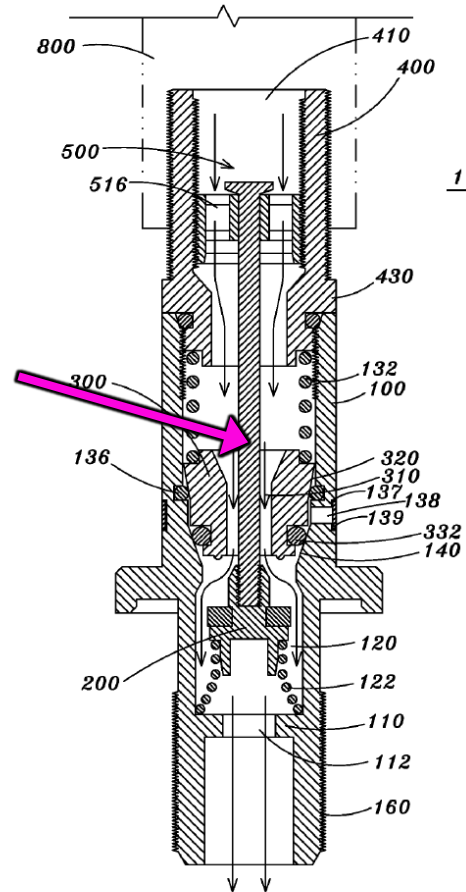


Fig. 3A

(b) Claim 3[b] and 3[c]

Hoose in view of *Huang* discloses *Huang's* valve activator **520, 522** with activation and deactivation positions where *Huang's* manually operable valve **1** is respectively in open and closed positions. In the open position, the central pin **520** is pushed downward (as shown by the yellow arrows), thereby allowing a gas to pass through *Huang's* valve **1**. Ex. 1102, ¶152; Ex. 1103, ¶148; Ex. 1109, FIG. 3A.

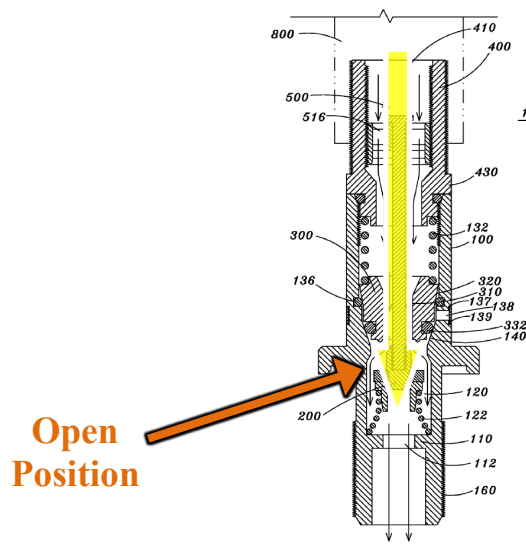


Fig. 3A

Alternatively, *Huang's* manually operable valve **1** is in a closed position (orange arrow), as shown in Figure 2. Ex. 1102, ¶153; Ex. 1103, ¶149; Ex. 1109, FIG. 2.

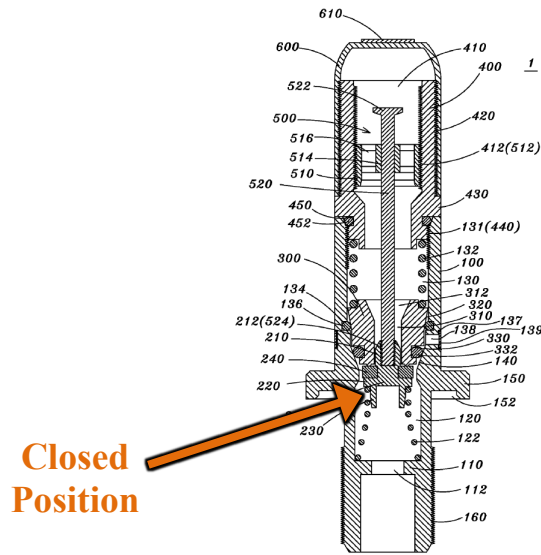


Fig. 2

7. Dependent Claim 4

Hoose in view of *Huang* discloses *Huang*'s button **522** (blue arrows) to select the activation position and the deactivation position. Ex. 1102, ¶154; Ex. 1103, ¶150; Ex. 1109, FIGS. 2, 3A.

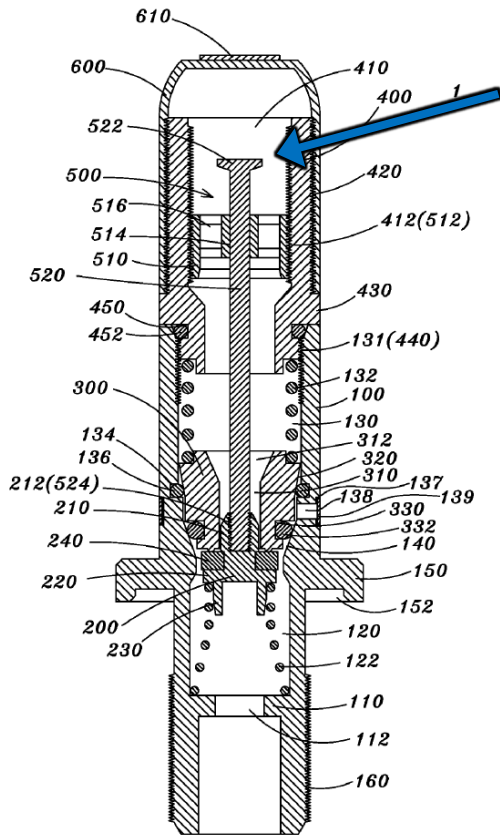


Fig. 2

Button
(522)

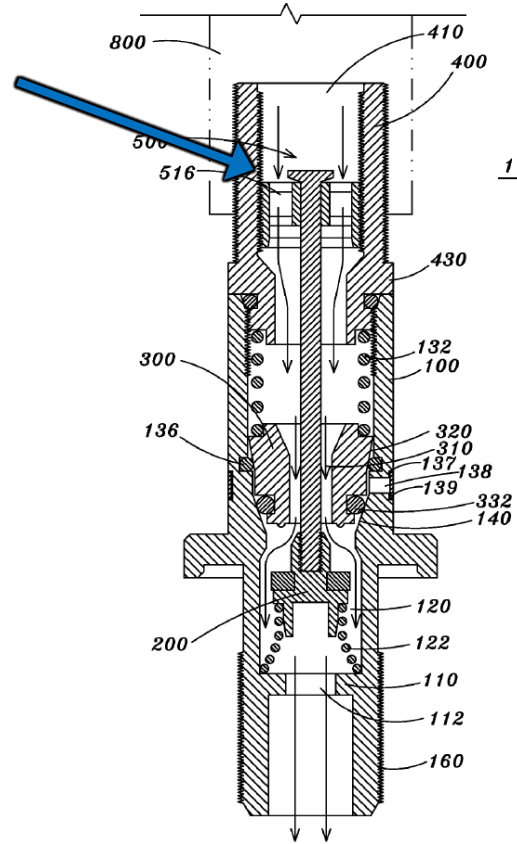


Fig. 3A

8. Dependent Claim 5

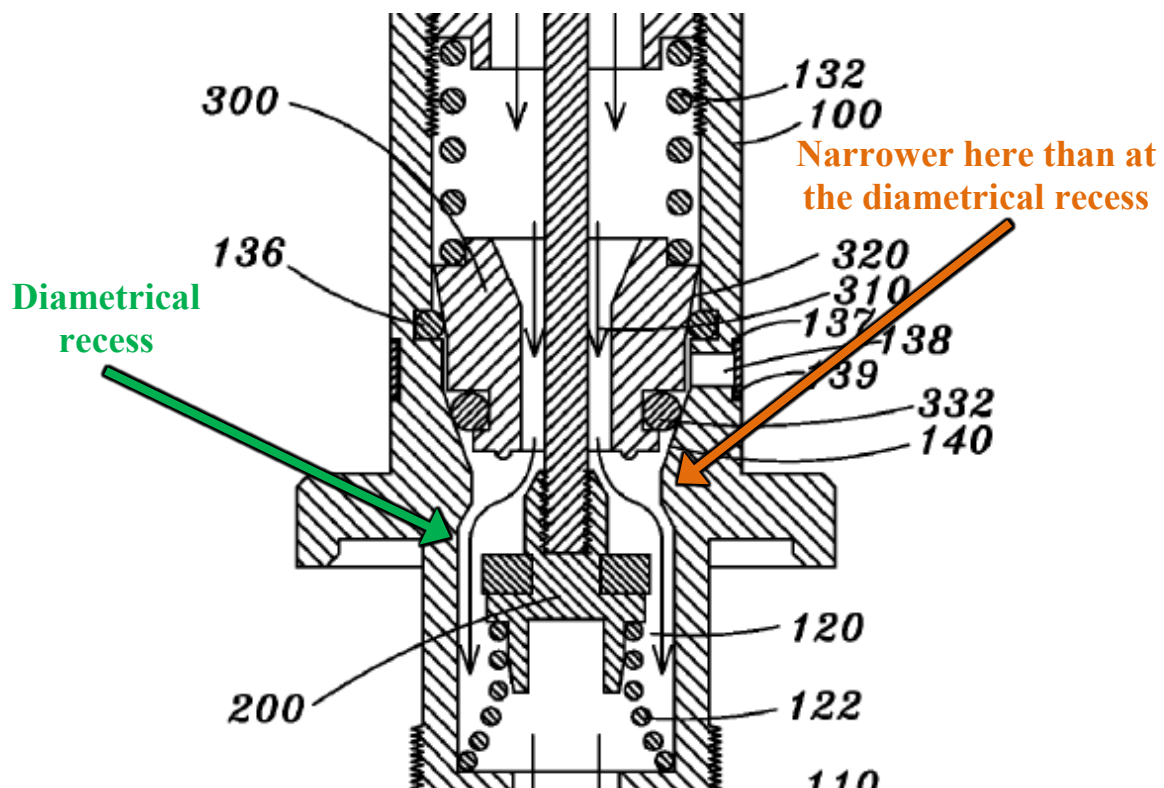
Hoose in view of *Huang* discloses *Huang's* manually operable valve **1** fixed into the passage at *Hoose's* valve **129** through *Hoose's* lower fork **140**, which passage would be formed on a die-cast feature of *Hoose's* lower fork **140**. The structures of *Hoose's* lower fork **1** do not differ from those made by die-casting, and this die-casting limitation (which lacks patentable weight) cannot distinguish claim 5 from *Hoose* in view of *Huang*. See *Kamstrup A/S*, 43 F.4th 1382–83. See also Ex. 1102, ¶155; Ex. 1103, ¶151. Alternatively, it would have been obvious to a

POSITA to modify *Hoose* in view of *Huang* to form *Hoose's* lower fork **140** using a die-cast procedure disclosed in *Danter*, as discussed above. Ex. 1102, ¶¶84, 156; Ex. 1103, ¶¶80, 152.

9. Dependent Claim 6

(a) Claim 6[pre] and Claim 6[a]

Hoose in view of *Huang* discloses *Hoose's* lower fork **140** and *Huang's* air bleed assembly **1** (in addition to *Hoose's* fluid passage), Ex. 1102, ¶¶157-158; Ex. 1103, ¶¶153-154; Ex. 1109, FIGS. 2, 3A; Ex. 1108, FIG. 9, and further discloses *Huang's* diametrical recess (green arrow). *Huang* shows that the inner bore diameter is larger at the green arrow than at the orange arrow. *Id.*



(b) Claim 6[b]

Hoose in view of *Huang* discloses *Huang*'s sealing o-ring **240** (red arrow). *Huang* includes an airtight washer **240** that is positioned around the first valve body **200** in the first chamber **120**. Ex. 1109, FIGS. 2, 4:38-48; Ex. 1108, FIG. 9. If an airtight washer is not an o-ring, a POSITA would have been motivated to substitute an o-ring for *Huang*'s airtight washer **240** because each are known to be substitutable, each providing the same function. This substitution would have been expected to yield predictable results. The resulting combination would be *Hoose*'s lower fork **140** in combination with *Huang*'s valve **1** having an o-ring replacing *Huang*'s airtight washer **240**. Ex. 1102, ¶¶159-160; Ex. 1103, ¶¶155-156.

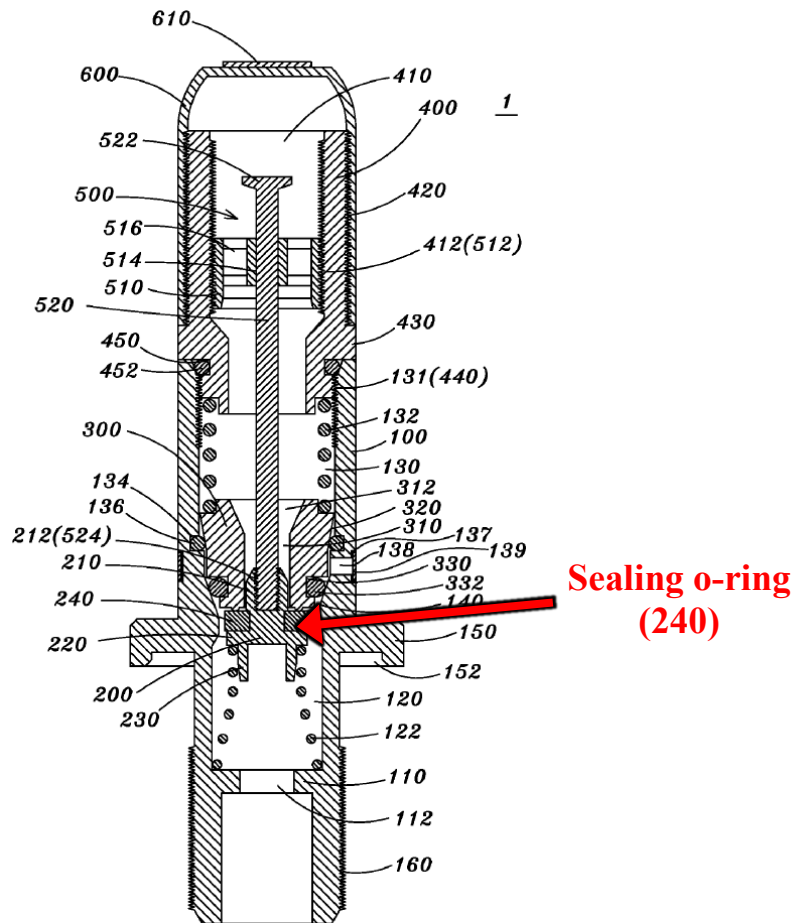


Fig. 2

(c) Claim 6[c] and 6[d]

Hoose in view of *Huang* discloses *Huang*'s sealing o-ring 240 (red arrow) having sealed and unsealed positions, as shown in *Huang*'s Figures 2 and 3A. Ex. 1102, ¶¶161-162; Ex. 1103, ¶¶157-158; Ex. 1109, FIGS. 2, 3A; Ex. 1108, FIG. 9.

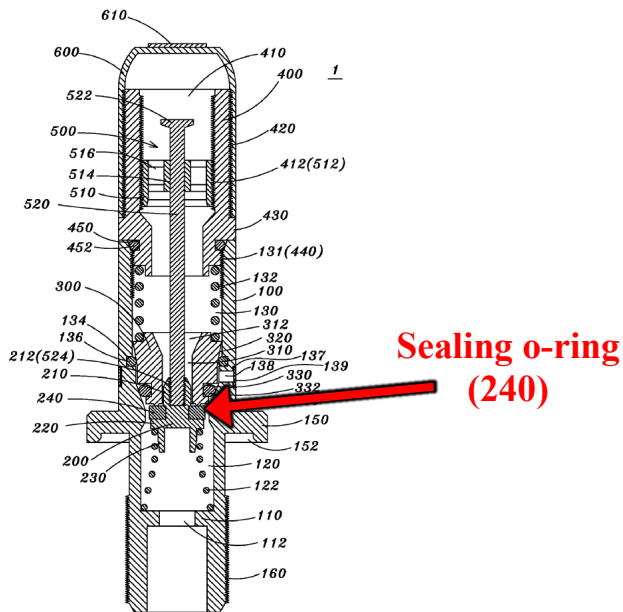


Fig. 2

(d) Claim 6[e]

Hoose in view of *Huang* discloses *Huang*'s sealing o-ring **240** having sealed and unsealed positions where the sealed position seals against air leaks from *Hoose*'s lower fork **140** through the die-cast feature. Further, when *Huang*'s valve activator **520**, **522** is moved from the activation position to the deactivation position, the sealing o-ring **240** moves further into the diametrical recess (green arrows), thereby attaining the unsealed position and letting air pressure by-pass into or out of *Hoose*'s lower fork **140** via *Hoose*'s vent hole. Ex. 1102, ¶163; Ex. 1103, ¶159; Ex. 1109, FIGS. 2, 3A; Ex. 1108, FIG. 9.

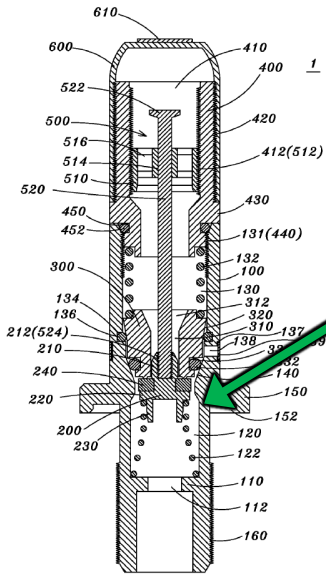


Fig. 2

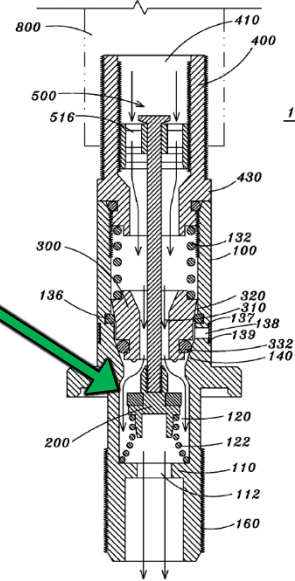


Fig. 3A

10. Dependent Claim 7

Hoose in view of *Huang* discloses *Huang*'s manually operable valve **1** (and the related fluid passage) includes a spring **122** (orange arrow) coupled to the valve activator **520, 522** (pink arrow), whereupon when the valve activator **520, 522** is moved into the deactivation position, discussed above, the spring **122** biases the valve activator **520, 522** toward the first (closed) position. Ex. 1102, ¶164; Ex. 1103, ¶160; Ex. 1109, FIGS. 2, 3A; Ex. 1108, FIG. 9.

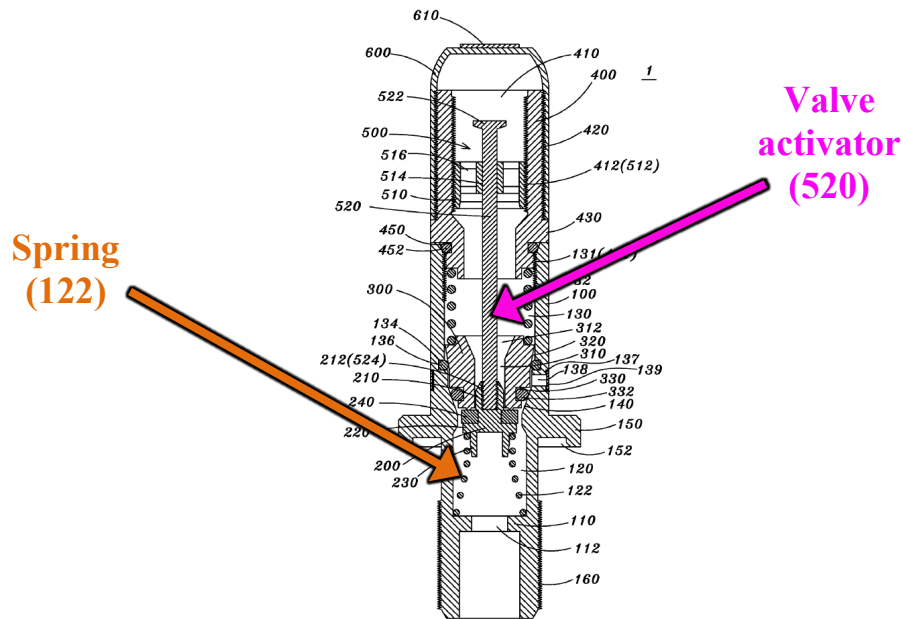
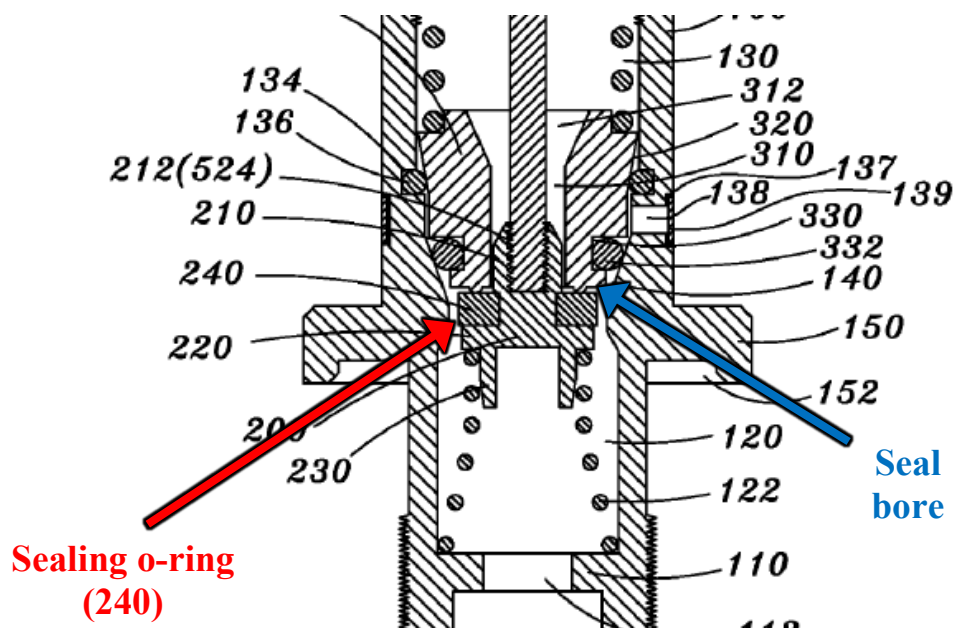


Fig. 2

11. Dependent Claim 8

Hoose in view of *Huang* discloses *Huang*'s manually operable valve **1** has a second position, discussed above, having a sealing engagement, as shown in Figure 2 below, wherein when in the sealing engagement, trapped air pressure does not bypass into or out of *Hoose*'s lower fork **140**. Ex. 1102, ¶165; Ex. 1103, ¶161; Ex. 1109, FIG. 2; Ex. 1108, FIG. 9.



E. Ground V: Claims 1 Through 3 and 5 Are Anticipated by *Ceriani*.

- 1. *Ceriani* discloses a conventional suspension fork with an internal oil bath and several air bleed assemblies.**

U.S. Patent No. 4,145,067 to Ceriani ("*Ceriani*") is prior art under pre-AIA 35 U.S.C. § 102(b), having been filed on July 1, 1976 and issued on March 20, 1979.
Ex. 1110.

Ceriani relates to an "improved suspension system ... of a fork for a motor vehicle, such as a motorcycle as shown in FIG. 5[,]” which is shown below.
Ex. 1110, 1:66-68; Ex. 1102, ¶70; Ex. 1103, ¶66.

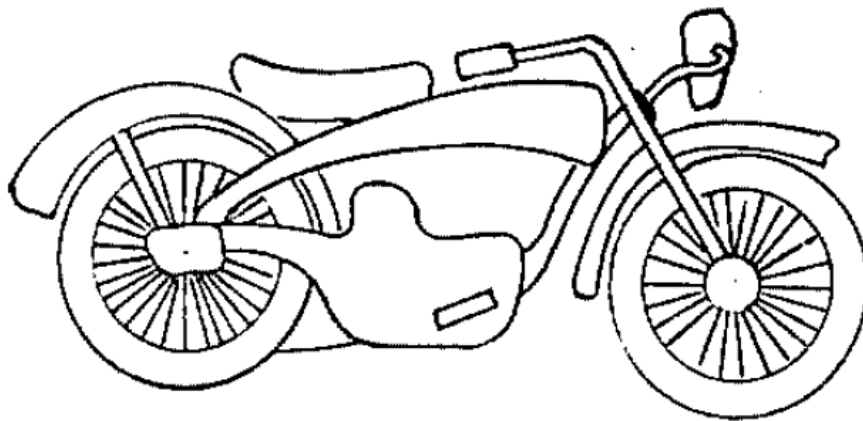


FIG. 5

Ex. 1110, FIG. 5.

Ceriani's suspension fork includes two tubular outer bodies **4** (blue in the figures below) that may slide telescopically with two tubular inner bodies **3** (pink), which inner bodies **3** are positioned above the outer bodies **4**, as shown in Figures 1 and 2 below. A sleeve **8** provides a seal between the outer bodies **4** and inner bodies **3**. Ex. 1102, ¶71; Ex. 1103, ¶67.

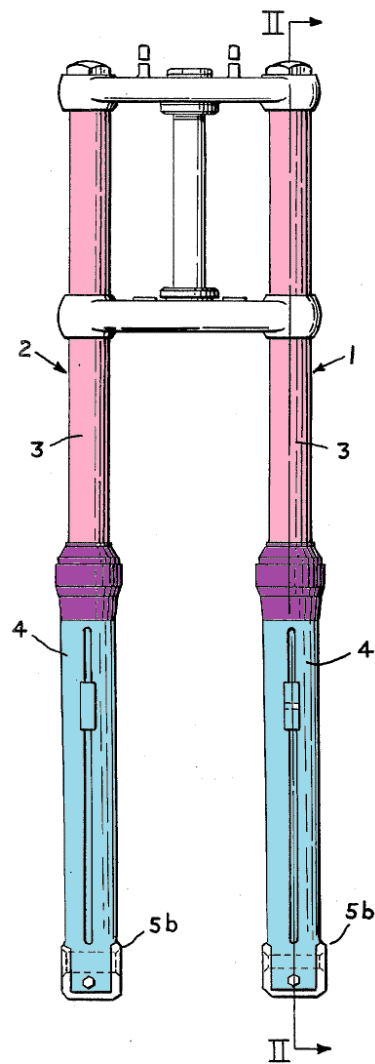


FIG. 1

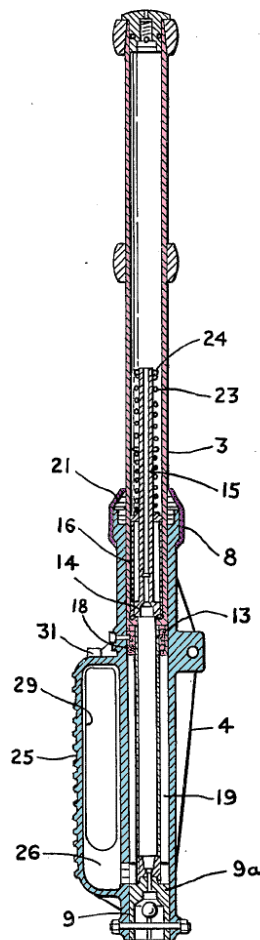


FIG. 2

Ceriani's Figure 3 provides a closer look at the area around the lower leg seal **8**. *Ceriani* includes a ring **7** and another seal **6**, each formed adjacent to the lower leg seal **8** at the second end **5a** of each outer body **4**. A POSITA would understand that the ring **7** may serve as a bushing to maintain the positioning of the outer bodies **4** and inner bodies **3** during telescopic movement. Ex. 1102, ¶72; Ex. 1103, ¶68.

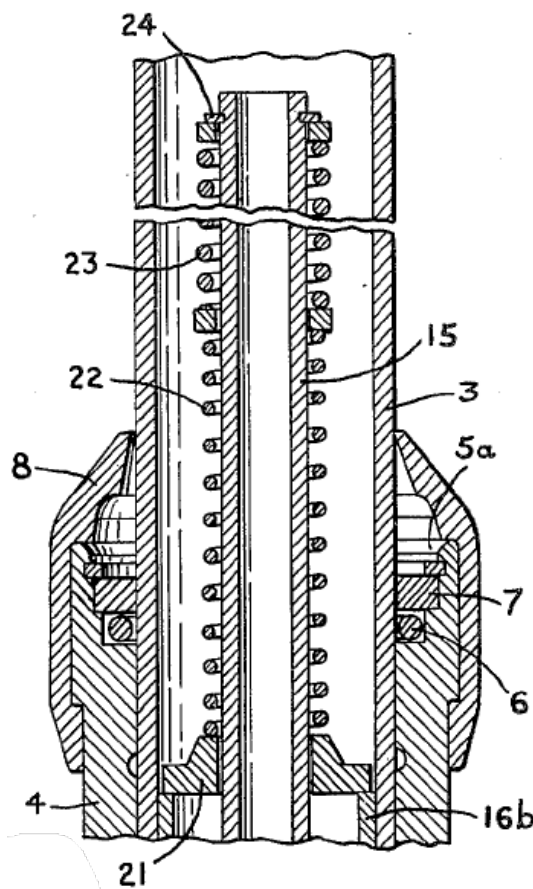


FIG. 3

Ceriani's Figure 4 provides a closer look at *Ceriani's* damper system. A piston **16a** incorporated into the inner body **3** “is movable axially in a cylindrical annular chamber or piston chamber **19** formed by the tubular outer body **4** and by the tube **13** therein.” Ex. 1110, 2:31-37. The piston chamber **19** is in fluid communication with an expansion chamber **26** that includes a pocket **29**, which pocket **29** may be “filled with fluid under pressure (for example, air, inert gases and the like).” Ex. 1110, 3:3-6. The piston chamber **19** is filled with an oil when fully assembled and before the pocket **29** is filled with a pressurized fluid. Ex. 1110, 3:13-17; Ex. 1102, ¶73; Ex. 1103, ¶69.

A screw (red arrow) may be used to fill the piston chamber **19** with oil, and to allow any gas within the piston chamber **19** be in fluid communication with the ambient air, thereby acting as an air bleed assembly. Whenever the fork is assembled, and the screw (red arrow) is sufficiently loosened, any gas pressure within the piston chamber **19** will be equalized with the ambient air pressure. Ex. 1102, ¶74; Ex. 1103, ¶70.



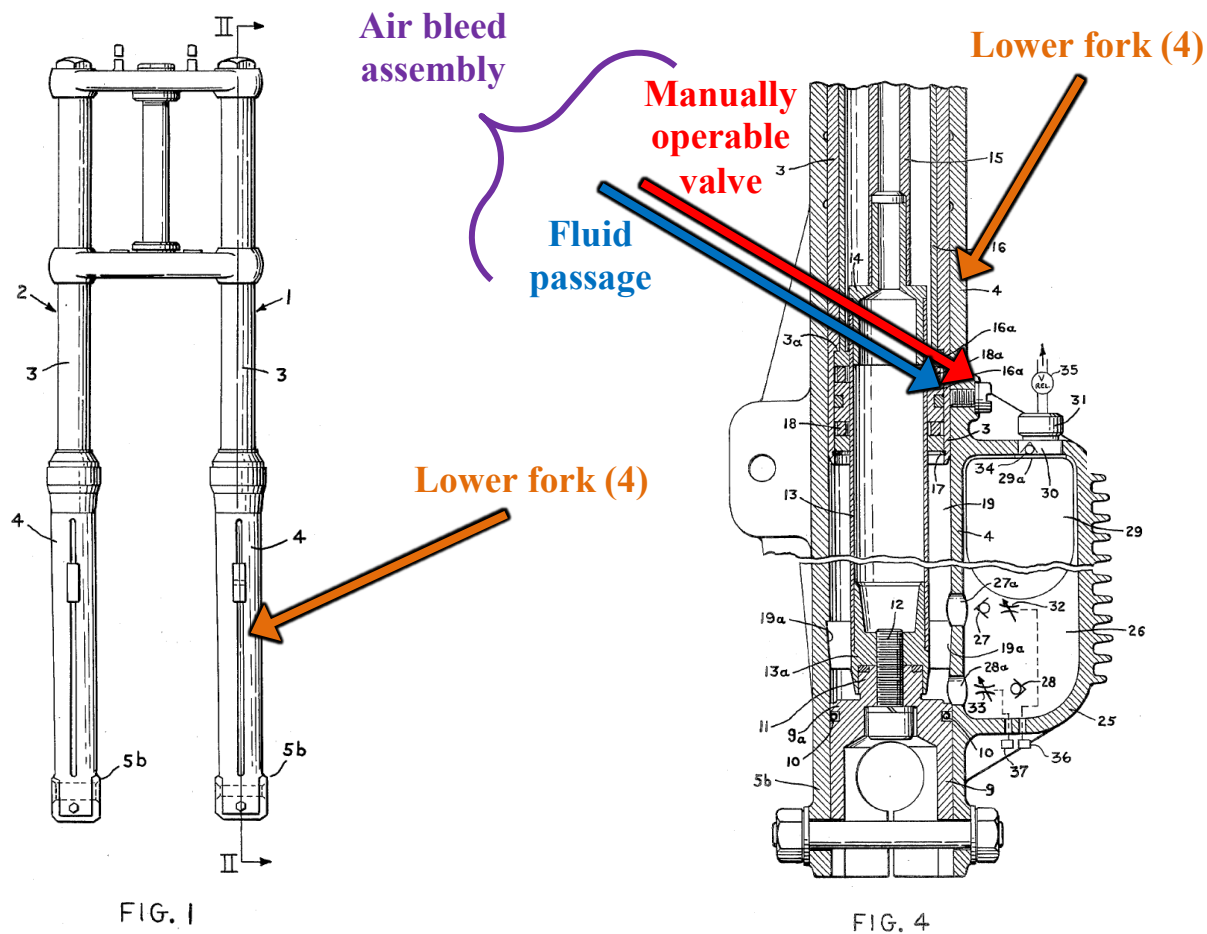
FIG. 4

Ceriani includes an alternate air bleed assembly including a fluid passage **30** that connects and adjustable pressure relief valve **35** and a pressure regulating valve **31** to the pocket **29**. These valves **35**, **31** allow the pocket **29** to be filled to a desired pressure and to provide pressure relief at a pressure value set by the user. Ex. 1102, ¶75; Ex. 1103, ¶71; Ex. 1110, 3:9-13, 3:61-4:7.

2. Independent Claim 1

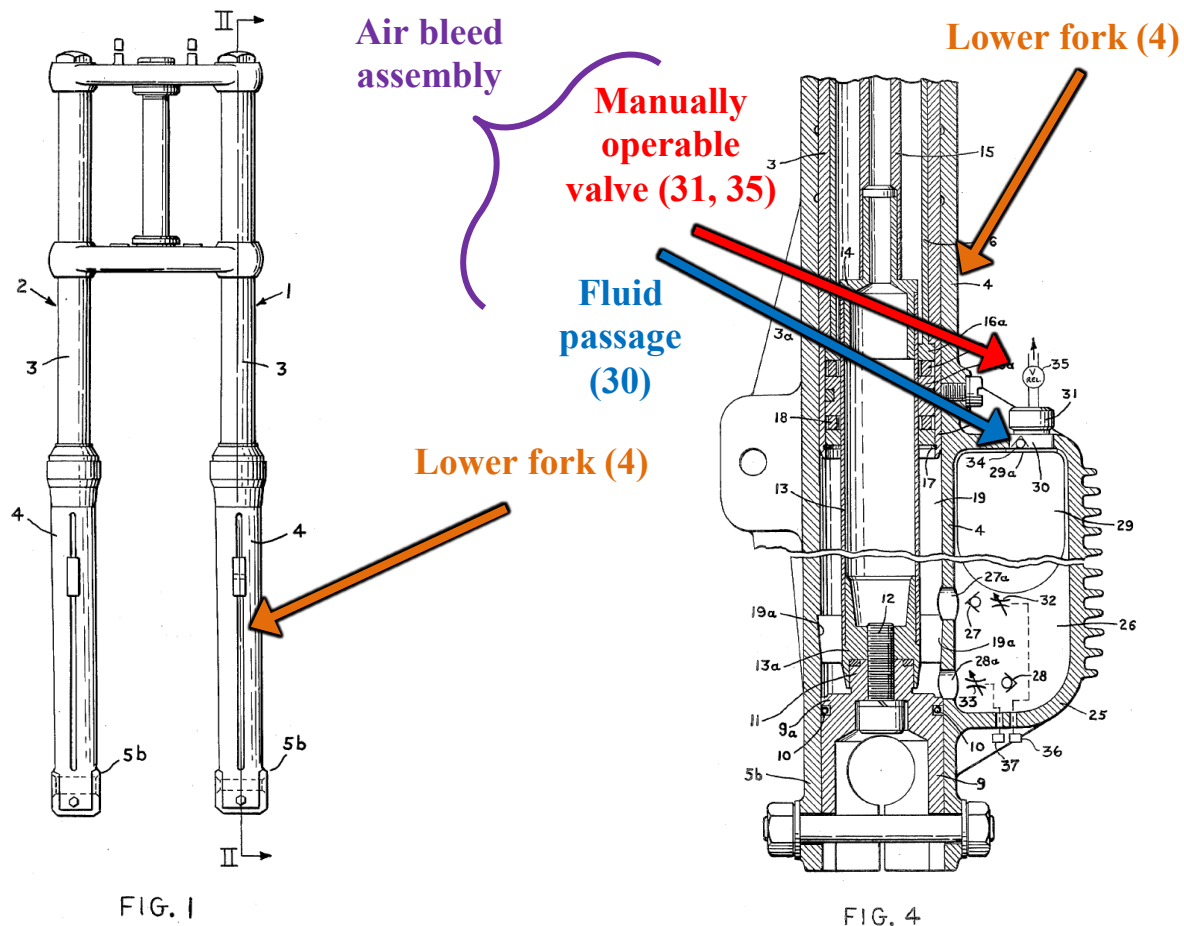
(a) Claim 1[pre]

Ceriani discloses “two equal arms of a fork for a motor vehicle, such as a motorcycle[.]” Ex. 1110, 1:67-68, FIGS. 1, 4, 5. Figures 1 and 4 of *Ceriani* show a lower fork **4** (orange arrow) including a pair of air bleed assemblies (purple bracket). The first of the pair is shown below:



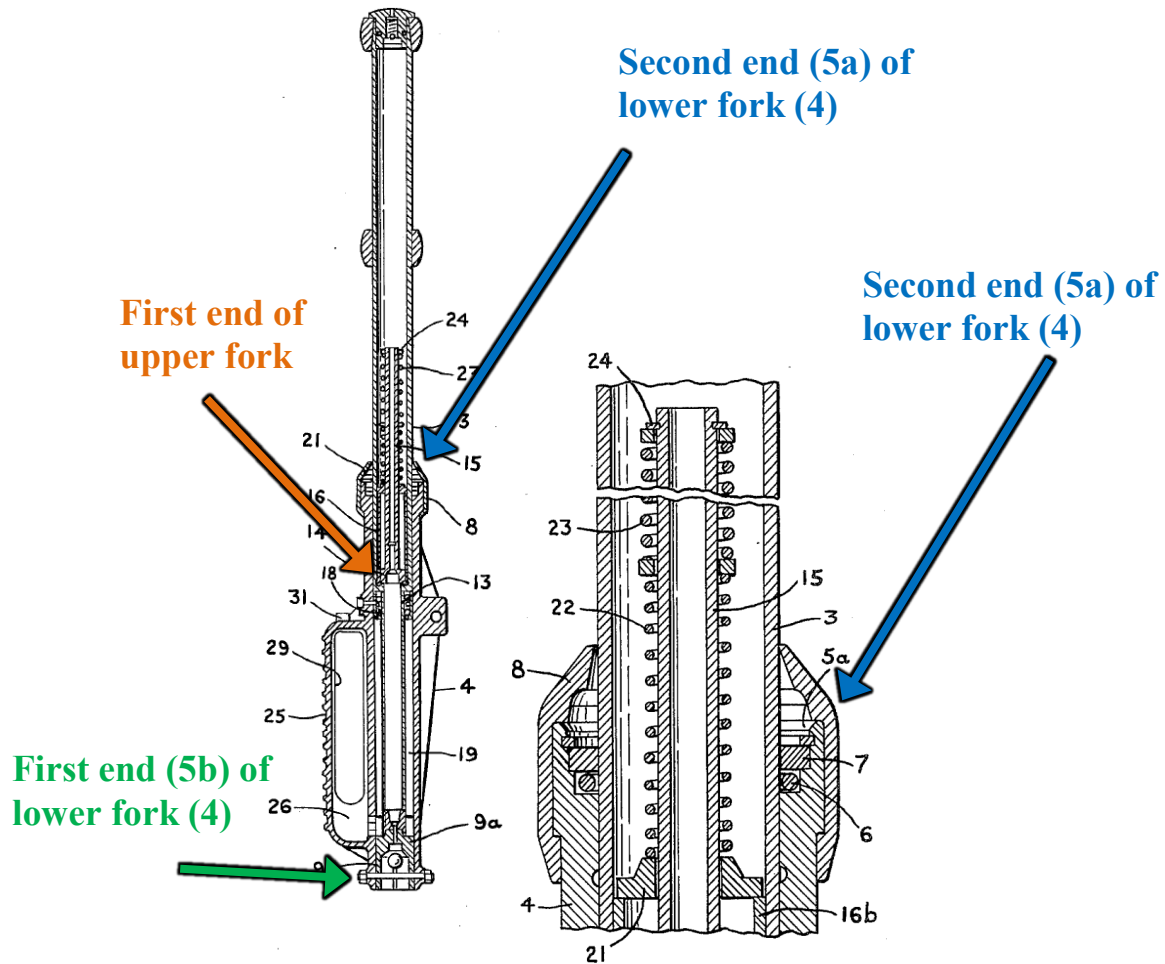
Ex. 1110, FIGS. 1, 4. Ex. 1102, ¶166; Ex. 1103, ¶162.

Alternatively, the following may be *Ceriani's* air bleed assembly **30, 31, 35** (purple bracket). Ex. 1110, 3:9-13, 3:61-4:7, FIGS. 1, 4; Ex. 1102, ¶167; Ex. 1103, ¶163.



(b) Claim 1[a]

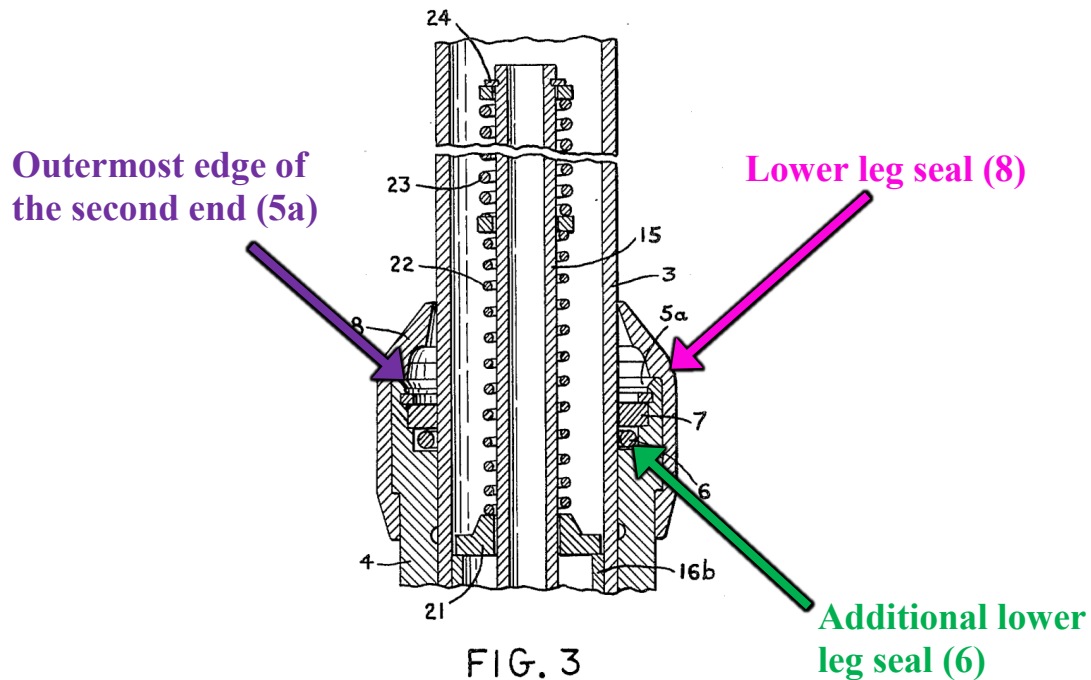
Ceriani discloses a lower fork 4 configured to have a first end 5b (green arrow) coupled to a vehicle wheel, and a second end 5a (blue arrow) configured to be telescopically engaged with a first end (orange arrow) of an upper fork 3. Ex. 1102, ¶168; Ex. 1103, ¶164; Ex. 1110, 2:5-16, FIGS. 2, 3.



(c) Claim 1[b]

Ceriani discloses a lower leg seal **8** (pink arrow, below) located at an outermost edge of the second end **5a** (purple arrow, below) of the lower fork tube **4**, the lower leg seal **8** configured for sealing closed a gap disposed between the upper fork tube **3** and the lower fork tube **4** when the lower fork **4** is telescopically engaged with the first end (orange arrow, above) of the upper fork **3**, thereby preventing an oil bath lubrication occupying an area within the lower fork tube **4** at a first end **5b**

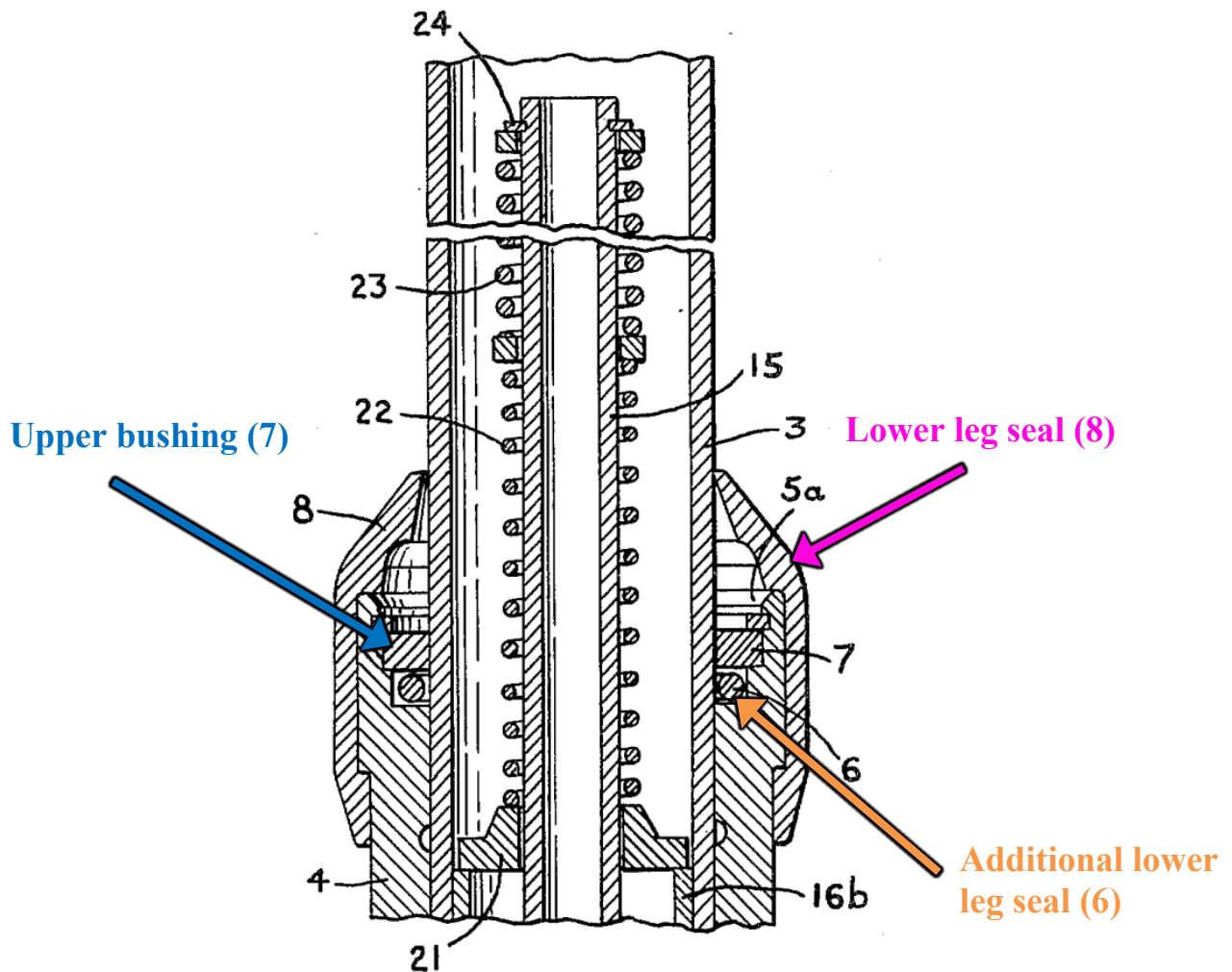
of the lower fork tube **4** from leaking from the lower fork **4**. *Ceriani* explains that the piston chamber **19**, **19a** within the lower end of the lower fork tube **4** includes oil. *See, e.g.*, Ex. 1102, ¶169; Ex. 1103, ¶165; Ex. 1110, 3:13-17.



The lower leg seal may alternatively be *Ceriani*'s annular gasket **6** (green arrow, above), which also seals between the upper fork tube **3** and the lower fork tube **4**. Ex. 1102, ¶170; Ex. 1103, ¶166.

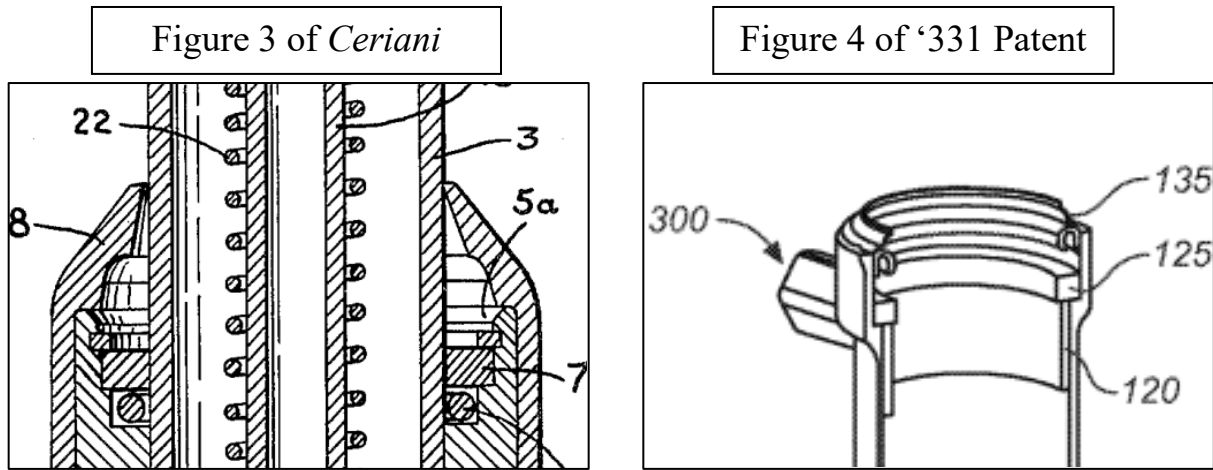
(d) Claim 1[c]

Ceriani discloses an upper bushing **7** (blue arrow) attached to and positioned adjacent to the lower leg seal **8** (or **6**) (pink (or orange) arrow). *Ceriani* discloses a ring **7** that, along with the lower leg seal **8** (or **6**), “protects body **3** at the joint at end **5a**.” Ex. 1110, 2:9-10, FIGS. 3-4; Ex. 1102, ¶171; Ex. 1103, ¶167.



Ex. 1110, FIG. 3.

Ceriani's configuration of the seal 8 and bushing 7 is the same as the only configuration disclosed in the '331 patent, as can be seen in a comparison between Figure 3 of *Ceriani* (on the left, below) and Figure 4 of the '331 patent (on the right, below). Ex. 1102, ¶172; Ex. 1103, ¶168; Ex. 1110, FIGS. 3-4.



Fox has already conceded that *Ceriani's* configuration of the seal **8** and bushing **7** meets this limitation. Fox accused SRAM's lower leg seal as meeting this limitation in its infringement contentions against SRAM in the District Court.

Claim	U.S. Patent No. 9,739,331	Rockshox Lyrik Ultimate
1[c]	an upper bushing attached to and positioned adjacent to said lower leg seal; and	The Rockshox Lyrik Ultimate has an upper bushing attached to and positioned adjacent to said lower leg seal. Lower leg seal Upper bushing

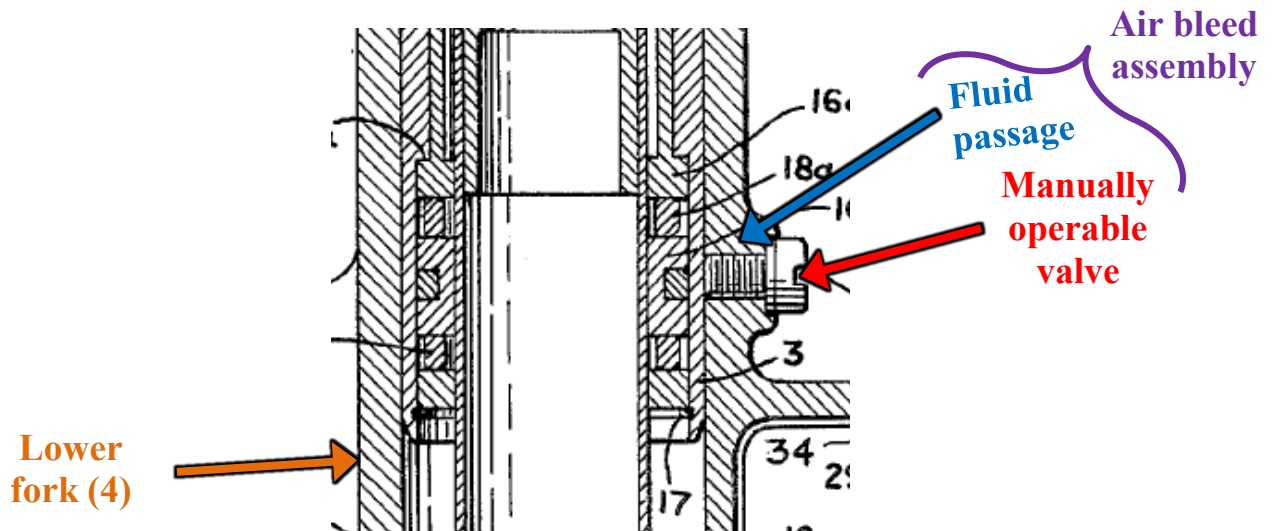
Applying Fox’s own mapping of its claim, *Ceriani* discloses this claim limitation. Ex. 1110, FIG. 3; Ex. 1101, FIG. 4; Ex. 1113, 19; Ex. 1114, 21; Ex. 1102, ¶¶173-174; Ex. 1103, ¶¶169-170.⁶

(e) Claim 1[d]

Ceriani discloses all elements of this limitation as interpreted by Fox. *Ceriani* includes an air bleed assembly (purple) disposed on the lower fork tube 4 that is configured for equalizing internal pressure within the lower fork 4 with ambient pressure. When *Ceriani*’s screw is removed, the air pressure within the lower fork 4 equalizes with the ambient air pressure. Ex. 1102, ¶175; Ex. 1103, ¶171; Ex. 1110, FIG. 4.⁷

⁶ Similarly, Fox has contended below that the “attached to” limitation generally means “in contact with” and appears to contend that this would include contact through other members. Ex. 1115, 7. Although SRAM disagrees with this construction as opposite the plain meaning of the term, Fox’s construction renders the claim invalid, and SRAM applied it herein.

⁷ If Fox’s construction of “air bleed assembly” is adopted (Ex. 1115, 7), *Ceriani* anticipates, as that term is applied throughout this Petition. Alternatively, if



Ceriani's air bleed assembly (purple bracket) may be *Ceriani's* pressure relief valve **35** and pressure regulating valve **31** (the claimed manually operable valve), and passage **30**. Through these valves **35**, **31** and passage **30**, any pressurized fluid, such as air, within the chamber **29** may be equalized with ambient pressure. Ex. 1102, ¶176; Ex. 1103, ¶172; Ex. 1110, 3:9-13, 3:61-4:7, FIG. 4.

the Board recognizes this disclaimer, *Ceriani* still renders this limitation obvious. Ex. 1102, ¶175, n.4; Ex. 1103, ¶171, n.4.

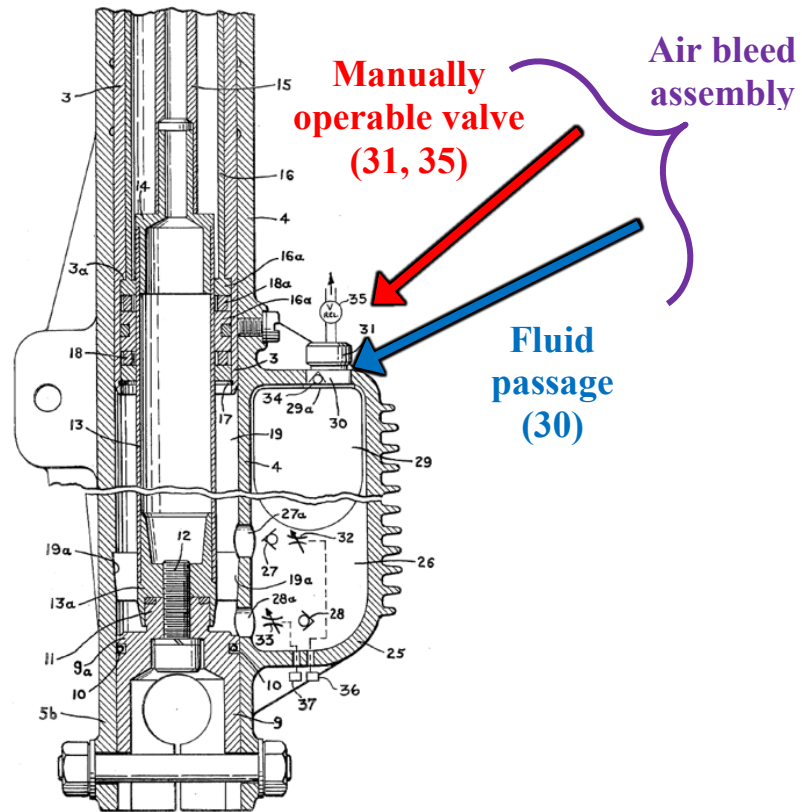
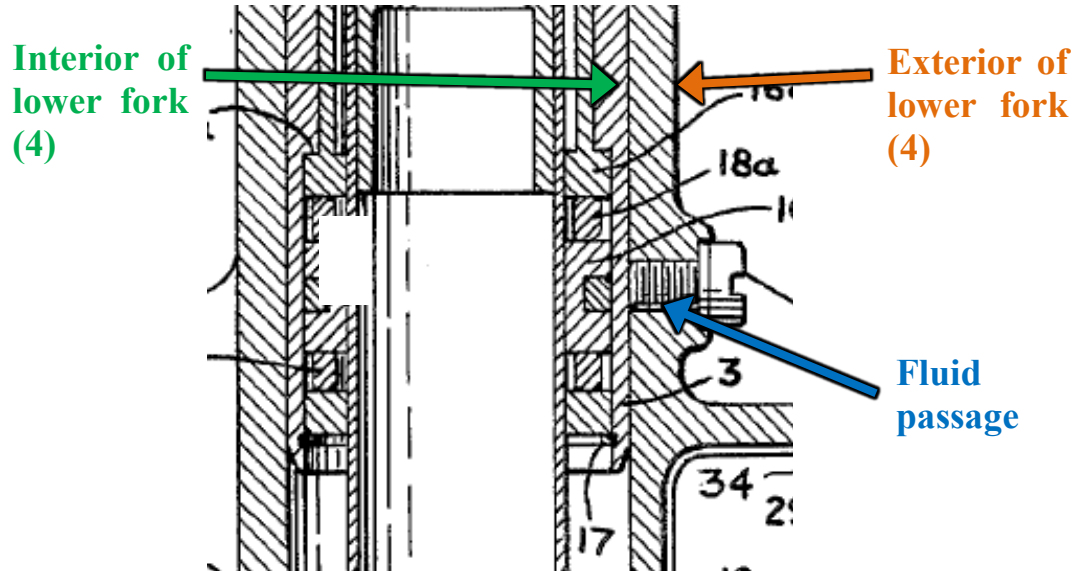


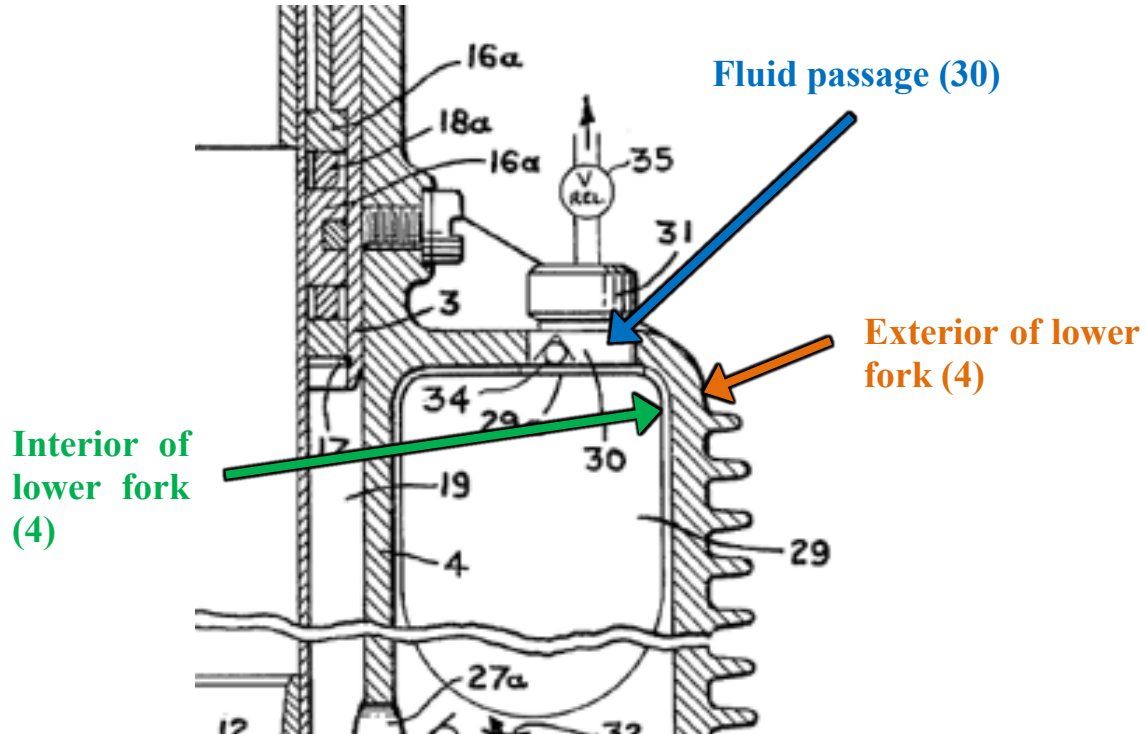
FIG. 4

(f) Claim 1[e]

Ceriani discloses a fluid passage (blue arrow) disposed between an interior (green arrow) and an exterior (orange arrow) of the lower fork 4. *Ceriani's* fluid passage accommodates the illustrated screw. Ex. 1102, ¶177; Ex. 1103, ¶173; Ex. 1110, FIG. 4.

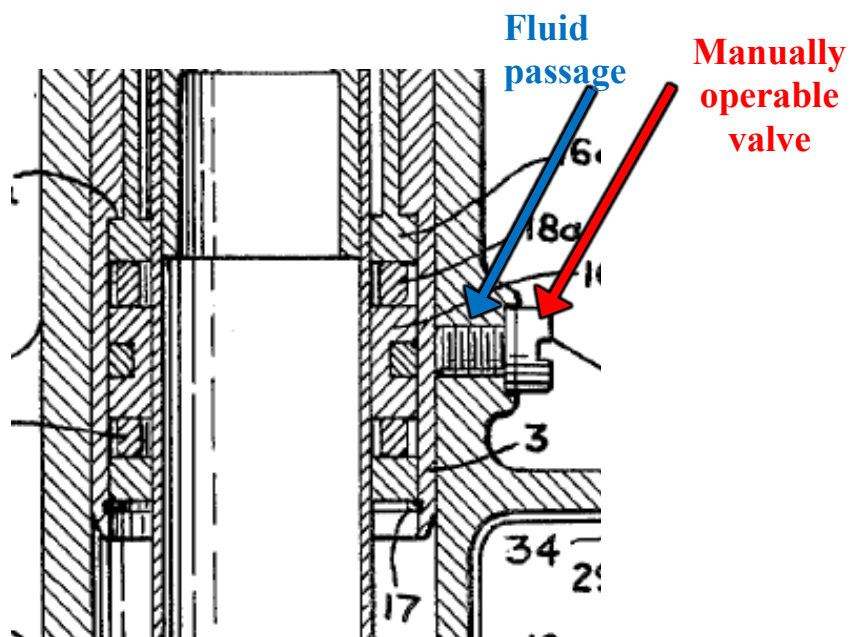


Ceriani also includes a fluid passage **30** (blue arrow) disposed between an interior (green arrow) and an exterior (orange arrow) of the lower fork **4**. Ex. 1102, ¶178; Ex. 1103, ¶174; Ex. 1110, FIG. 4.



(g) Claim 1[f]

Ceriani discloses a manually operable valve (red arrow) is located in the lower fork 4 and coupled to the fluid passage (blue arrow). *Ceriani's* screw has a first position substantially closing the fluid passage (when sealed) and a second position allowing a fluid to flow between the interior and the exterior (when sufficiently unscrewed or absent). *Ceriani's* manually operable valve is disposed between the lower leg seal 8 and/or 6 (orange arrow) and the first end 5b (green arrow) of the lower fork 4. Ex. 1102, ¶179; Ex. 1103, ¶175; Ex. 1110, FIGS. 2, 4.



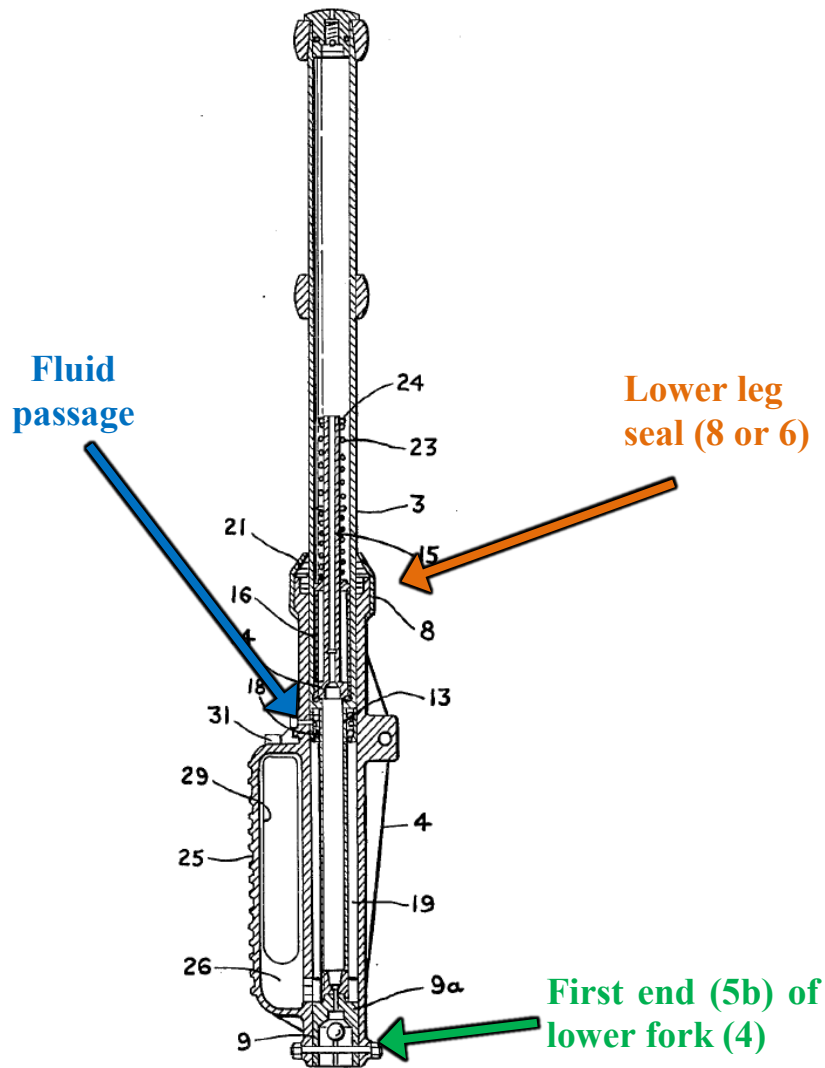
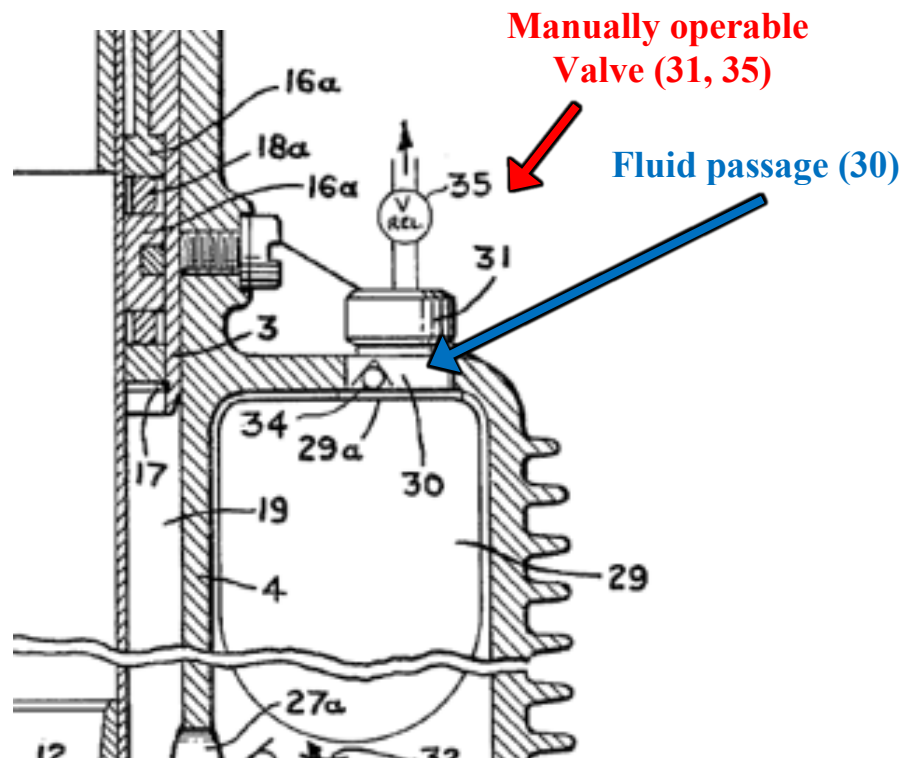


FIG. 2

Ceriani's other manually operable valve **35**, **31** (red arrow, below) is located in the lower fork **4** and coupled to the fluid passage **30** (blue arrow, below). *Ceriani's* valve **31**, **35** has a first position substantially closing the fluid passage **30** (when sealed) and a second position allowing a fluid to flow between the interior and the exterior (when unsealed). Ex. 1110, 3:3-17; 3:61-4:13, FIGS. 2, 4. *Ceriani's*

other manually operable valve **35**, **31** is disposed between the lower leg seal **8** (and/or **6**) (orange arrow, above) and the first end **5b** of the lower fork **4** (green arrow, above). Ex. 1102, ¶180; Ex. 1103, ¶176; Ex. 1110, FIG. 4.



(h) Claim 1[g]

Ceriani discloses a fluid passage (blue arrow) and manually operable valve (red arrow) are located at a distance from an oil bath lubrication (within areas **19** and **19a**) (orange arrows) within the lower fork **4** such that when the screw is removed or loosened, most if not all of the oil bath lubrication (within **19**, **19a**) remains within the lower fork **4**. Due to the placement of the screw, most if not all of the oil will stay within the lower fork **4**, especially if the pocket **29** is vented in advance, as

would be the case during any maintenance or before the pocket **29** is charged with pressurized fluid. Any air within the oil bath space (**19**, **19a**) will be equalized to ambient pressure when the screw is removed, while the oil will remain in the oil bath lubrication (**19**, **19a**). Ex. 1102, ¶181; Ex. 1103, ¶177; Ex. 1110, FIG. 4.

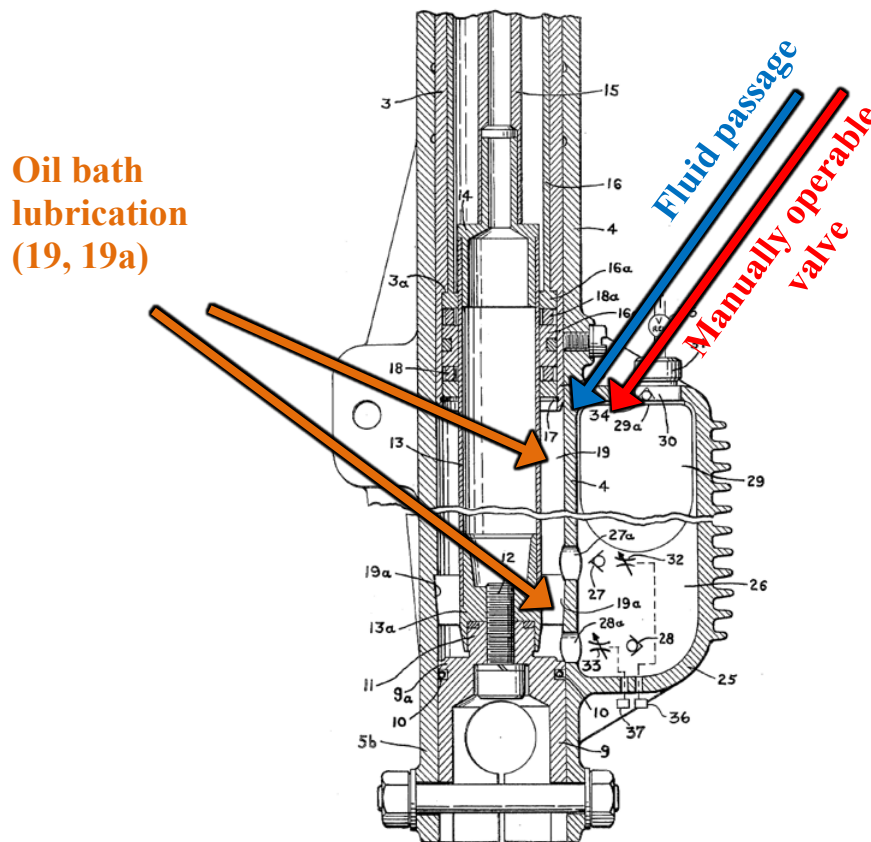


FIG. 4

Ceriani's other manually operable valve **31**, **35** (red arrow) and fluid passage **30** (blue arrow) are located at a distance from an oil bath lubrication (within areas **19** and **19a**) (orange arrows) within the lower fork **4** such that when the valves **31**, **35** are opened, all of the oil bath lubrication (within **19**, **19a**) remains within the

lower fork 4, due at least to the pocket 29 preventing any oil from exiting the passage 30. Any air within the pocket 29 will be equalized to ambient pressure when the valves 31, 35 are opened. Ex. 1102, ¶182; Ex. 1103, ¶178; Ex. 1110, FIG. 4.

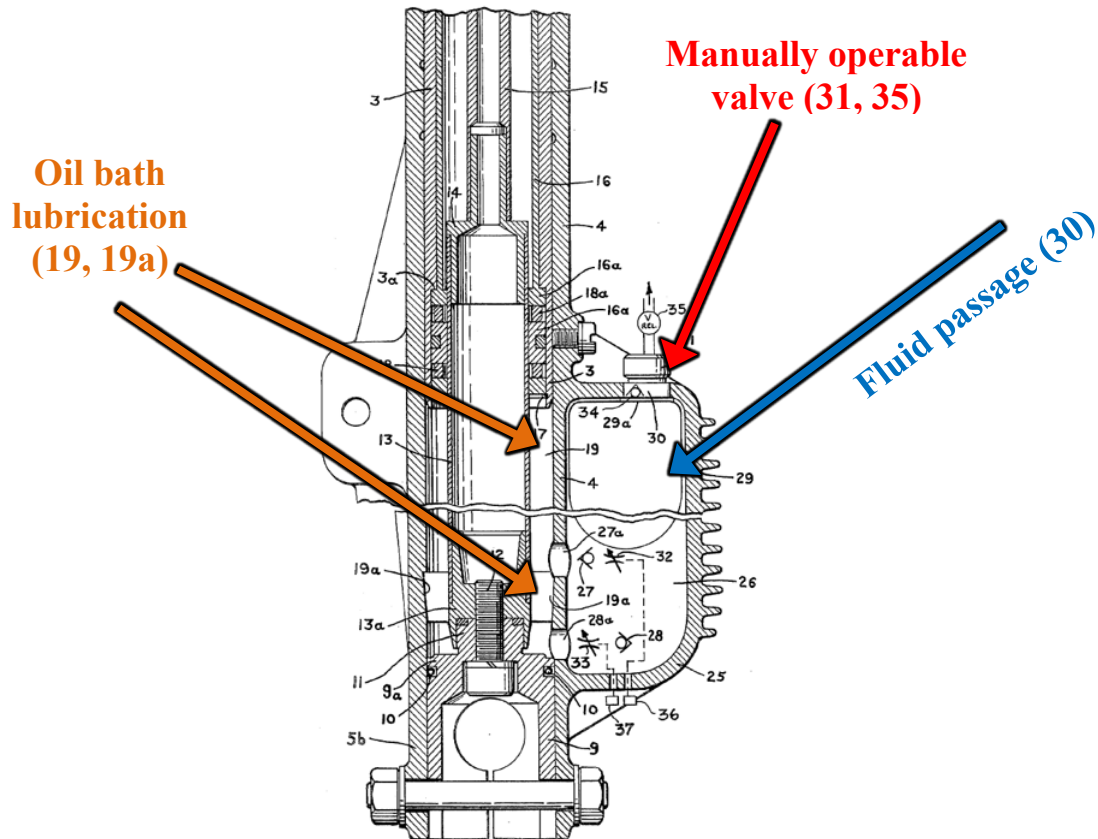


FIG. 4

3. Dependent Claim 2

Ceriani includes all limitations of claim 1 and further includes a gas flowing through the fluid passage, at least when the user allows any gas with the piston chamber 19, 19a to flow via the screw and related screw hole. *Ceriani*'s screw will allow any gas to equalize with ambient air pressure before the piston chamber 19,

19a when the piston chamber **19**, **19a** is not completely filled with oil, which would occur when the fork is assembled or whenever routine maintenance is performed. Ex. 1102, ¶183; Ex. 1103, ¶179; Ex. 1110, FIG. 4.

Ceriani also includes a gas flowing through the fluid passage **30**, at least when the user configures any gas with the piston chamber **19**, **19a** to flow via the screw and related screw hole. *Ceriani*'s manually operable valve **31**, **35** will allow any gas pressure within the pocket **29** to equalize with ambient air pressure. Ex. 1102, ¶184; Ex. 1103, ¶180; Ex. 1110, FIG. 4.

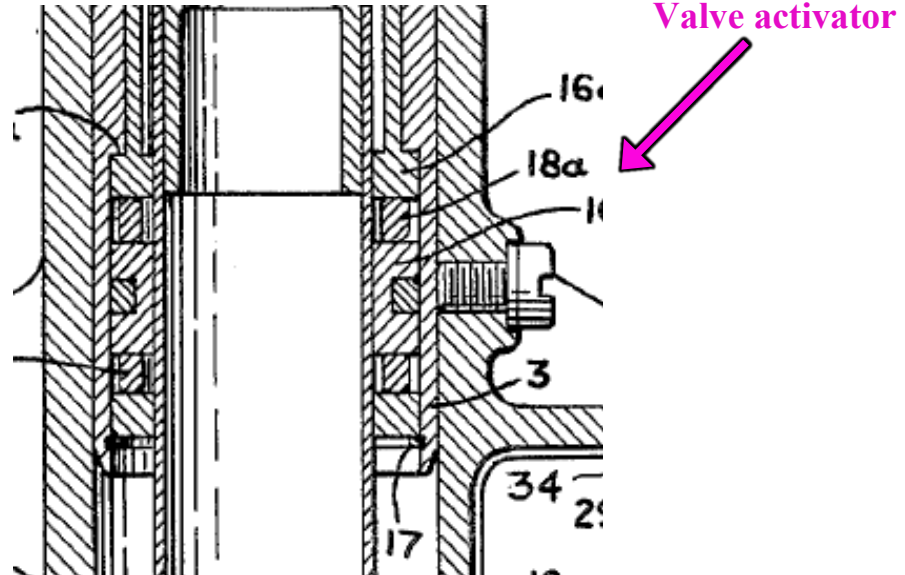
4. Dependent Claim 3

(a) Claim 3[pre]

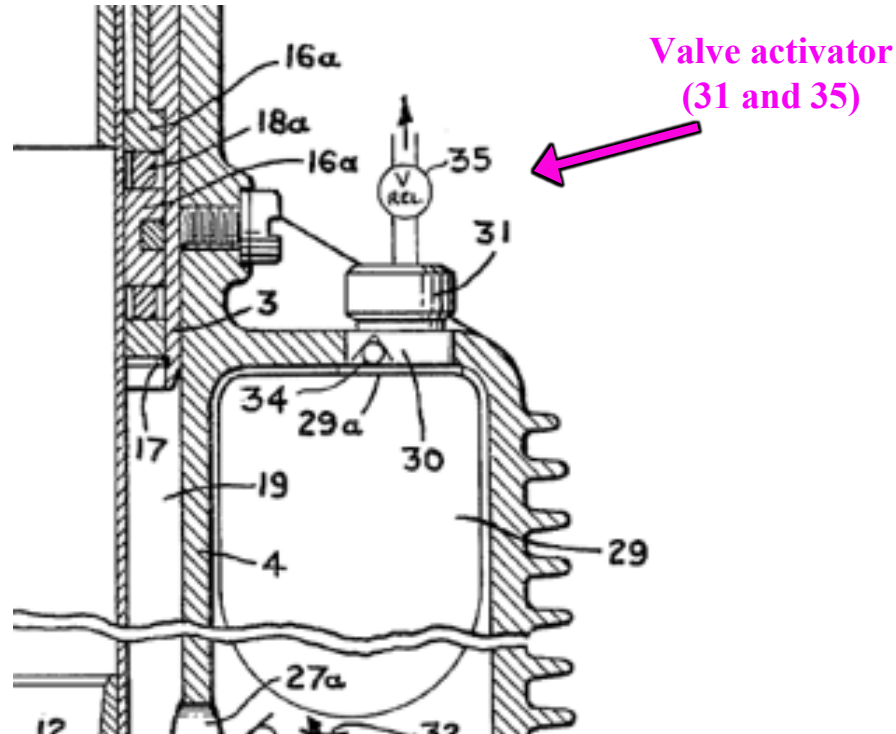
Ceriani includes all elements of this preamble, as discussed above.

(b) Claim 3[a]

Ceriani includes all elements of this limitation, including a valve activator (portions of screw for communicating force from a manual input to the threads of the screw) (pink arrow) coupled with the manually operable valve (portions of screw). Ex. 1110, FIG. 4. Alternatively, the threads of *Ceriani*'s screw can be considered the valve activator, as identified by the Examiner during the prosecution of the '331 patent. Ex. 1104, 88; Ex. 1102, ¶186; Ex. 1103, ¶182.



Ceriani also includes a valve activator (portions of **31**, **35**) (pink arrow) coupled with the manually operable valve **31**, **35**. *Ceriani* explains that at least the pressure relief valve **35** may be manually operated. Ex. 1102, ¶187; Ex. 1103, ¶183; Ex. 1110, 3:66-4:2, FIG. 4.



(c) Claim 3[b]

Ceriani includes a valve activator with an activation position where the manually operable valve is in an open position (when the screw is removed or sufficiently loosened). Ex. 1102, ¶188; Ex. 1103, ¶184; Ex. 1110, FIG. 4.

Additionally, *Ceriani's* valve activator **31**, **35** (pink arrow) includes an activation position where the manually operable valve **31**, **35** is in an open position (when the valves are open). See Ex. 1110, FIG. 4, 3:9-13, 3:61-4:2. The valves **31**, **35** may be selectively opened or closed to retain fluid or allow it to pass. Ex. 1102, ¶189; Ex. 1103, ¶185; Ex. 1110, FIG. 4.

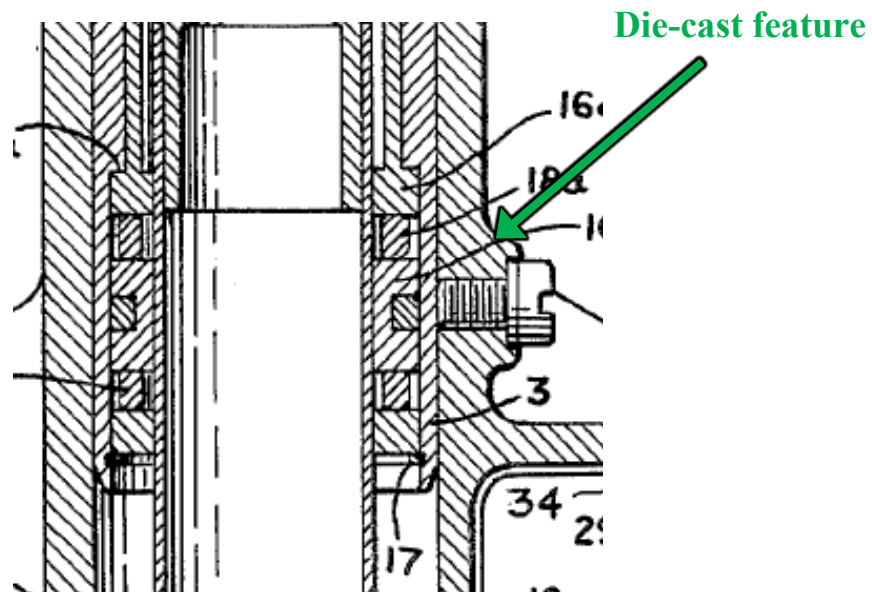
(d) Claim 3[c]

Ceriani includes a valve activator with a deactivation position where the manually operable valve is in a closed position, as shown in FIG. 4. When the screw is open, any internal air pressure may equalize with ambient pressure. Ex. 1102, ¶190; Ex. 1103, ¶186; Ex. 1110, FIG. 4.

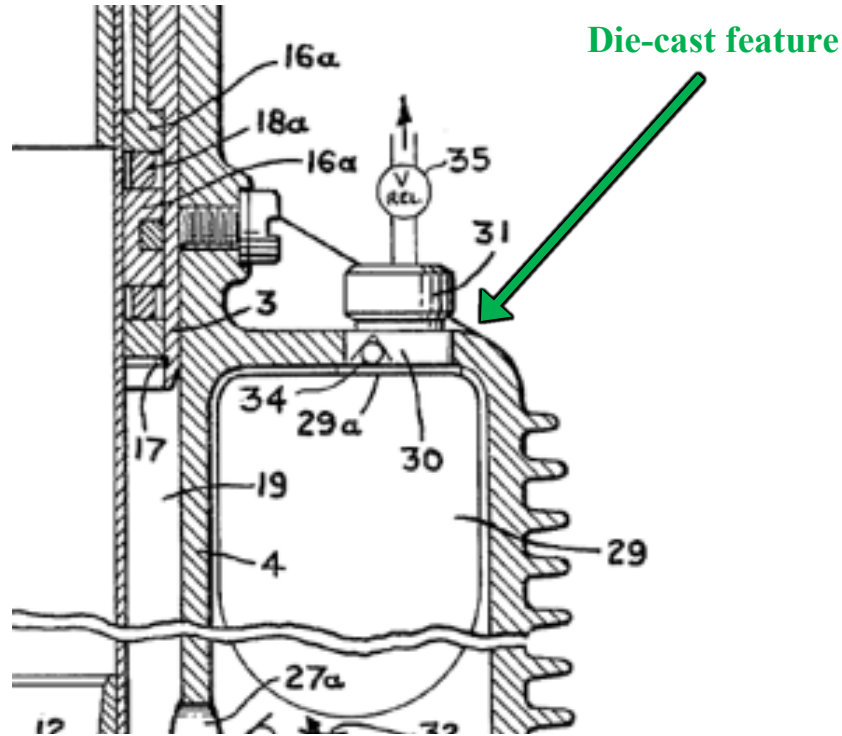
Ceriani's valve activator (portions of **31, 35**) includes a deactivation position where the manually operable valve **31, 35** (red arrow) is in a closed position, as shown in FIG. 4. *See* Ex. 1110, FIG. 4, 3:9–13, 3:61–4:2. The valves **31, 35** may be selectively opened or closed to allow fluid to pass or to retain fluid. *Id.* When either valve **31, 35** is open, any internal air pressure may equalize with ambient pressure. Ex. 1102, ¶191; Ex. 1103, ¶187; Ex. 1110, FIG. 4.

5. Dependent Claim 5

Ceriani includes all limitations of claim 3 as well as a manually operable valve fixed into a passage through the body of the lower fork **4**. *Ceriani* discloses that the valve activator is located on a die-cast feature (green arrow) of the lower fork **4**. Ex. 1102, ¶192; Ex. 1103, ¶188; Ex. 1110, FIG. 4.



Ceriani also includes a manually operable valve **31**, **35** fixed into a passage **30** through the body of the lower fork **4**, and *Ceriani* discloses that the valve activator (portions of **31**, **35**) is located on a die-cast feature (green arrow) of the lower fork **4**. Ex. 1102, ¶193; Ex. 1103, ¶189; Ex. 1110, FIG. 4.



The structures of *Ceriani*'s lower fork **1** do not differ from those made by die-casting, and this die-casting limitation (which lacks patentable weight) cannot distinguish claim 5 from *Ceriani*. See *Kamstrup A/S*, 43 F.4th 1382–83. See also Ex. 1102, ¶194; Ex. 1103, ¶190; Ex. 1110, FIG. 4.

F. Ground VI: Claims 1 Through 8 Are Rendered Obvious Under 35 U.S.C. § 103 by *Ceriani* in View of *Bruckbauer* and/or *Danter*.

- 1. It would have been obvious to a POSITA to modify *Ceriani* with *Bruckbauer*, thereby yielding the subject matter of Claims 1-8.**

Combining *Ceriani* and *Bruckbauer* is straightforward: a POSITA would modify *Ceriani*'s typical suspension fork to incorporate *Bruckbauer*'s pressure relief system at a point along the length of the lower fork **4** of *Ceriani*'s suspension fork. Ex. 1102, ¶¶85-86; Ex. 1103, ¶¶81-82.

Ceriani's suspension fork construction sets the lower tubes **4** as the outer tubes and the upper tubes **3** as the inner tubes of the telescoping suspension fork. *See, e.g.*, Ex. 1110, 1:65-2:4, FIGS. 1, 3, 4. *Ceriani*'s damper assembly includes a piston **16a**, a piston chamber **19**, a pair of one-way valves **27**, **28**, and a pocket **29** that may provide a deformable source of rebound pressure. Each of these components are formed in the lower tubes **4** of the suspension fork **34**, which tubes are outer tubes. *See, e.g.*, Ex. 1110, 2:34-3:17, FIGS. 1, 3, 4. Ex. 1102, ¶87; Ex. 1103, ¶83.

Ceriani includes two separate spaces that may include a source of gas pressure relevant here: any gas within the piston chamber **19** (red highlight) and the compressible fluid within the pocket **29** (purple highlight).

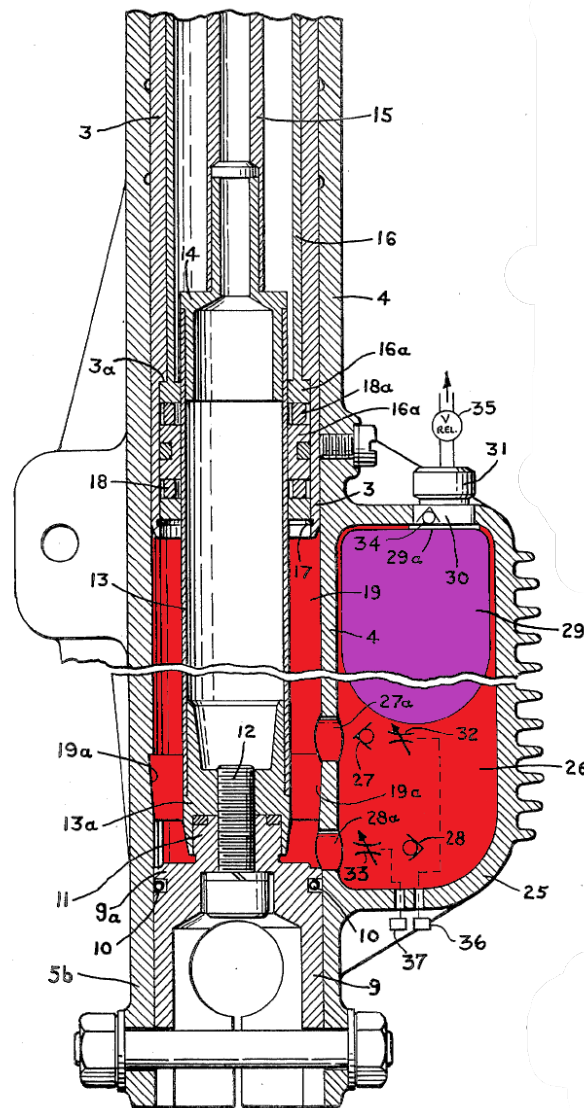


FIG. 4

Ex. 1110, FIG. 4; Ex. 1102, ¶88; Ex. 1103, ¶84.

A POSITA would have been motivated to add *Bruckbauer's* pressure relief system to a portion of *Ceriani's* lower tubes **4** at two different points to reach these two areas of known, trapped gases: (1) at the screw to vent the piston chamber **19**, **19a** and (2) at the valves **31**, **35** to vent the pocket **29**. By adding a means for manual

venting of these regions of pressure, pressure of any gas trapped within the the piston chamber **19**, **19a** or the pocket **29** may be equalized with ambient pressure. Ex. 1102, ¶89; Ex. 1103, ¶85; Ex. 1110, FIG. 4.

For the substitution of *Ceriani's* screw with *Bruckbauer's* push-button pressure relief valve **10**, *Bruckbauer* explains that its push-button pressure relief valve **10** “can be used in place of the pressure relief plug or screw” that is often found in forks. In fact, *Bruckbauer's* push-button pressure relief valve **10** could be incorporated by merely screwing it into the threads already provided for the screw. Such a substitution would allow for the purging of any air left within the piston chamber **19** when the shock is being filled with oil, and would allow for an internal gas to be equalized with the ambient air pressure when the fork is being maintained. Pressure within the piston chamber **19** may be equalized before the air is purged from the piston chamber **19** via the pocket **29**. Ex. 1102, ¶90; Ex. 1103, ¶86.

Similarly, the substitution of *Ceriani's* valves **31**, **35** with *Bruckbauer's* push-button pressure relief valve **10** would be equally trivial. *Bruckbauer's* push-button pressure relief valve **10** could be directly screwed into the passage **30**, or a portion thereof, to facilitate manual and on-the-fly adjustments of the gas pressure within the pocket **29**. The gas within the pocket **29** may be equalized with the ambient air pressure before the fork is broken down for maintenance. Such an equalization is

necessary to safely, and cleanly, disassemble the suspension fork. Ex. 1102, ¶91; Ex. 1103, ¶87.

A POSITA would thus have been motivated to substitute (A) *Ceriani*'s screw and (B) *Ceriani*'s valves **31**, **35** with *Bruckbauer*'s push-button pressure relief valve **10**. *Id.*

2. It would have been obvious to a POSITA to modify *Ceriani* (alone or in view of *Bruckbauer*) with *Danter*'s die-cast procedure, thereby yielding the subject matter of claims 5-6.

The combination of *Ceriani* (alone or in view of *Bruckbauer*) and *Danter* is straightforward: a POSITA would modify *Ceriani*'s typical lower fork **4** to incorporate *Danter*'s die-casting method for the same reasons as set forth above with respect to its combination with *Kashima*. Ex. 1102, ¶92; Ex. 1103, ¶88.

3. Independent Claim 1

(a) Claim 1[pre]

Ceriani in view of *Bruckbauer* discloses *Ceriani*'s lower fork **4** with an air bleed assembly comprising either (A) *Ceriani*'s threaded hole and screw or (B) *Ceriani*'s valves **31**, **35** and passage **30** is substituted with *Bruckbauer*'s pressure relief valve **10**. Ex. 1102, ¶¶195–199; Ex. 1103, ¶191-195; Ex. 1110, FIGS. 1-4; Ex. 1106, FIGS. 1-4.

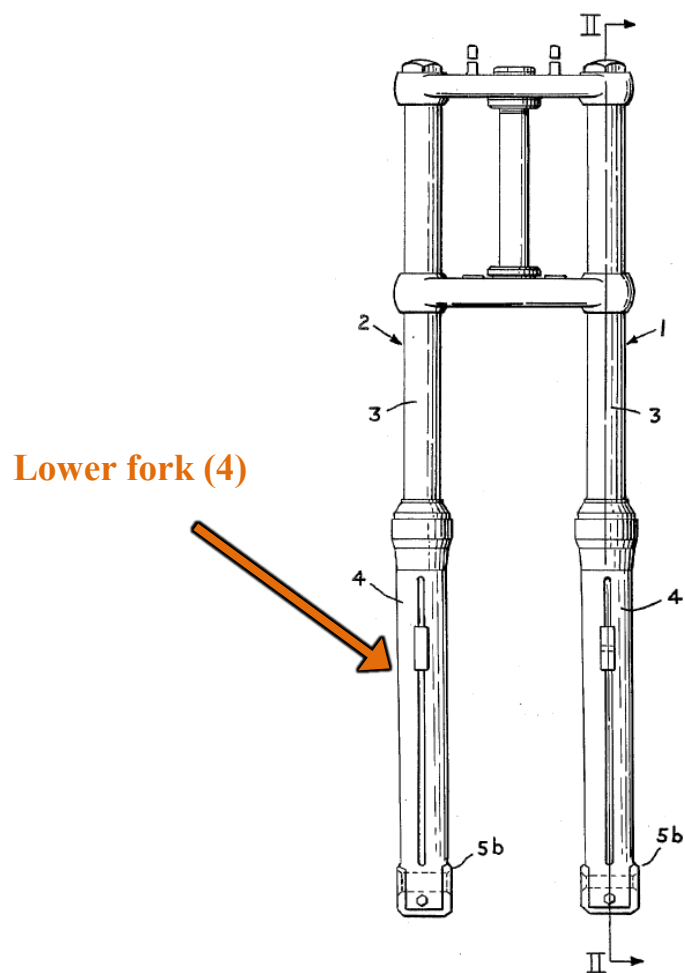
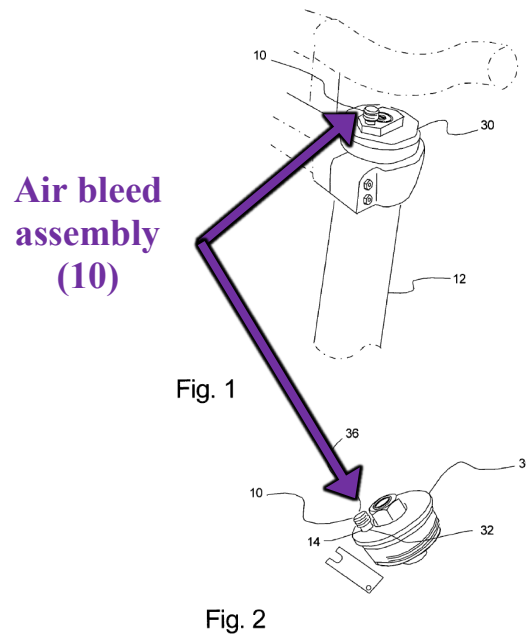


FIG. 1



(b) Claim 1[a]–Claim 1[d]

Ceriani discloses all elements of claim 1[a] – claim 1[c], as discussed above, with *Ceriani* in view of *Bruckbauer* further disclosing *Bruckbauer's* pressure relief valve **10** and either (A) *Ceriani's* threaded hole or (B) *Ceriani's* passage **30** as an air bleed assembly (purple arrows) disposed on *Ceriani's* lower fork tube **4** at either (A) *Ceriani's* threaded hole or (B) *Ceriani's* passage **30**. This air bleed assembly is configured for equalizing ambient pressure within the lower fork **4**. When *Bruckbauer's* valve cap **36** is depressed, gas may travel through *Bruckbauer's* pressure relief valve **10** while it is in an open position (pink arrow), as illustrated in Figure 4, and the air pressure within the fork **4** will equalize with the ambient air pressure. *Id.*

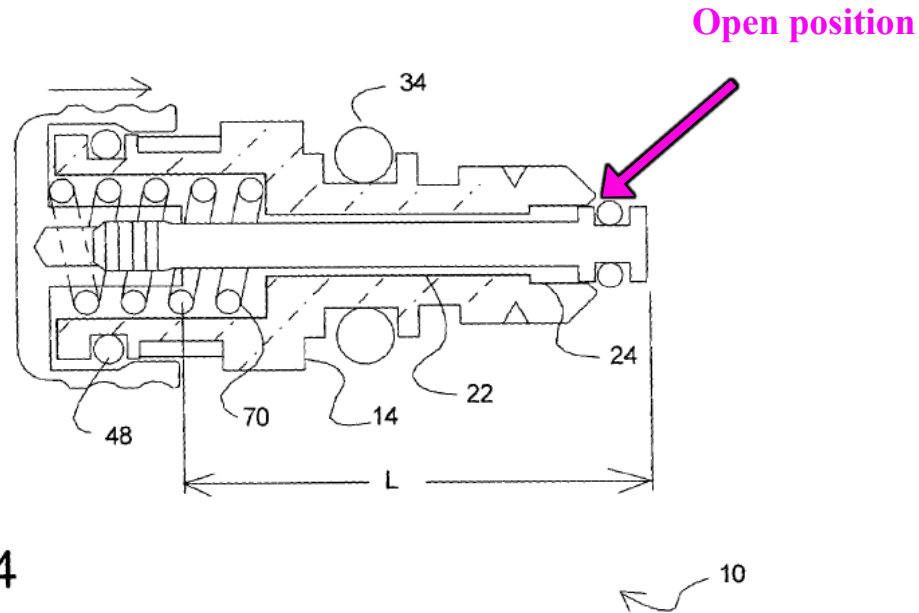


Fig. 4

(c) Claim 1[e]

Ceriani in view of *Bruckbauer* discloses all elements of this limitation, as discussed above.

(d) Claim 1[f]

Ceriani in view of *Bruckbauer* discloses *Bruckbauer's* manually operable valve 10 (purple arrows) located in *Ceriani's* lower fork 4 is coupled to either (A) *Ceriani's* threaded hole or (B) *Ceriani's* passage 30 (blue arrows). *Bruckbauer's* manually operable valve 10 has a first position substantially closing the fluid passage (orange arrow, *Bruckbauer's* Figure 3) and a second position allowing a fluid to flow

between the interior and the exterior (pink arrow, above, *Bruckbauer's* Figure 4).

Ex. 1102, ¶201; Ex. 1103, ¶197 Ex. 1110, FIGS. 1-4; Ex. 1106, FIGS 1-4.

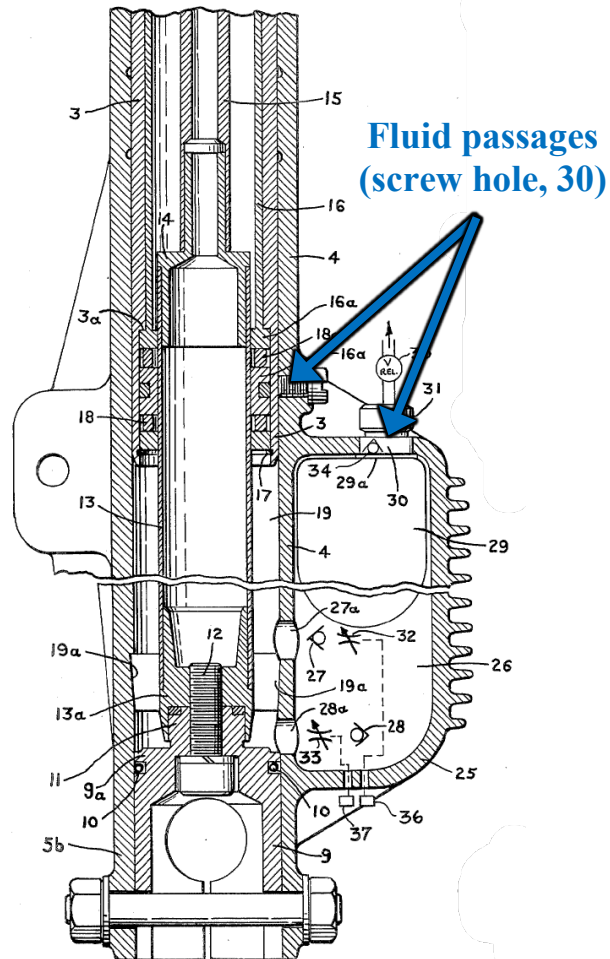
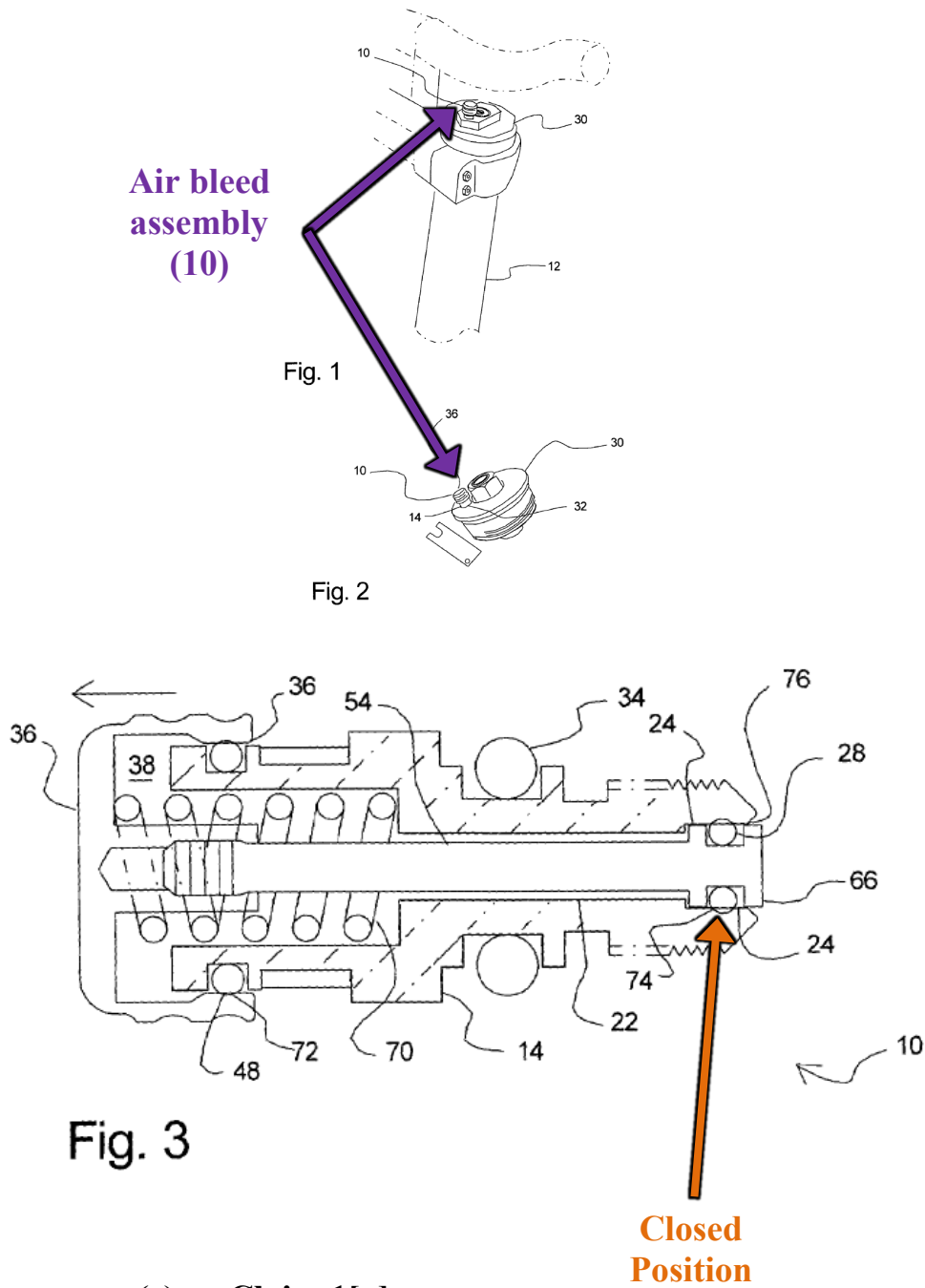


FIG. 4



(e) Claim 1[g]

Ceriani in view of *Bruckbauer* discloses either (A) *Ceriani*'s threaded hole or (B) *Ceriani*'s passage 30 and *Bruckbauer*'s manually operable valve 10 are located at a distance from an oil bath lubrication within the lower fork 1. This positioning

of *Bruckbauer's* valve **10** results in a configuration wherein when *Bruckbauer's* manually operable valve **10** is in the second position (open position), most, if not all of the oil bath lubrication remains within *Ceriani's* lower fork **1** because *Bruckbauer's* valve **10** is near the top of *Ceriani's* lower fork **1** and can be closed once oil begins to leak. Ex. 1110, FIGS. 1-4; Ex. 1106, FIGS. 1-2. When *Bruckbauer's* pressure relief valve **10** is placed into *Ceriani's* threaded hole, the oil level will be below the threaded hole until either a sufficient amount of oil has been added or the oil is forced out of the piston chamber **19** via compression of the fork or otherwise. When *Bruckbauer's* pressure relief valve **10** is placed into *Ceriani's* passage **30**, oil may not leak therefrom because oil is prohibited from passing through the membrane that forms the pocket **29**. Ex. 1102, ¶202; Ex. 1103, ¶198.

Any air within the lower fork **1** will be equalized to ambient pressure when the valve **10** is opened, while the oil will remain in the oil bath lubrication space within the lower fork **1**. Ex. 1102, ¶203; Ex. 1103, ¶199; Ex. 1110, FIGS. 1-4; Ex. 1106, FIGS. 1-4.

4. Dependent Claim 2

Ceriani discloses all elements of this claim, as discussed above.

5. Dependent Claim 3

(a) Claim 3[pre] and Claim 3[a]

Ceriani in view of *Bruckbauer* discloses *Bruckbauer*'s valve activator **54, 36** (pink arrow) coupled with its manually operable valve **54, 36, 14, 70**. *Ceriani* in view of *Bruckbauer* includes a valve cap **36** and connecting shaft **54** coupled with *Bruckbauer*'s manually operable valve **54, 36, 14, 70**. Ex. 1102, ¶¶205-206; Ex. 1103, ¶¶201-202; Ex. 1106, 5:3-15, FIG. 3.

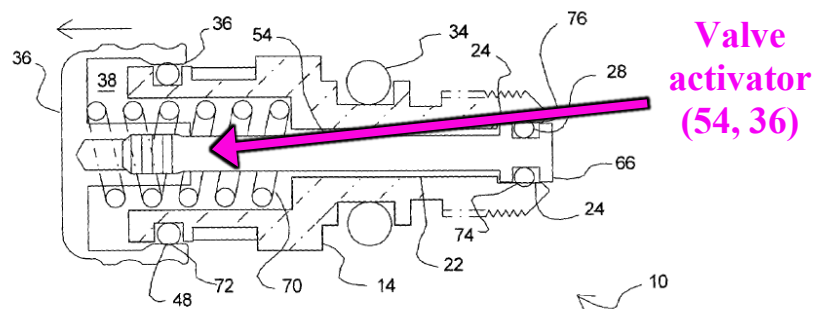


Fig. 3

(b) Claim 3[b] – Claim 3[c]

Ceriani in view of *Bruckbauer* discloses *Bruckbauer*'s valve activator **54, 36** including activation and deactivation positions where the manually operable valve **54, 36, 14, 70** is in open and closed positions (orange arrow). *Ceriani* in view of *Bruckbauer*'s valve cap **36**, connecting shaft **56**, and hollow body **14** include a spaced-apart relationship where a gas may travel through the air bleed assembly **10**, and a biased position where a gas may not travel through the air bleed assembly **10**. Ex. 1102, ¶¶207-208; Ex. 1103, ¶¶203-204; Ex. 1106, 5:3-9, 5:23-28, FIGS. 3-4.

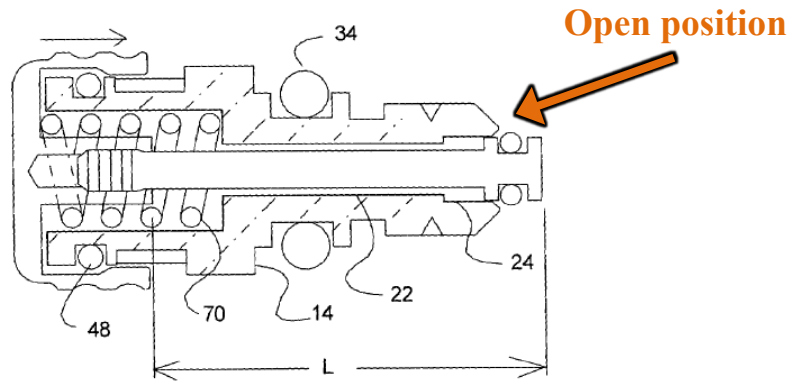


Fig. 4

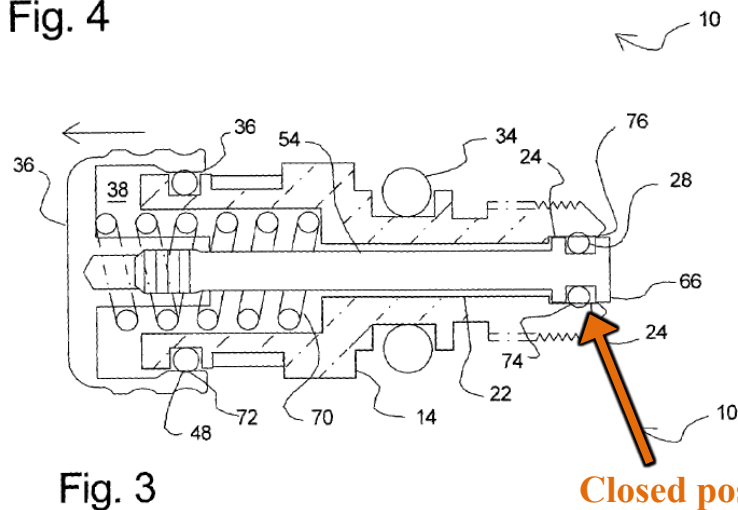


Fig. 3

6. Dependent Claim 4

Ceriani in view of *Bruckbauer* discloses *Bruckbauer's* valve activator 54, 36 includes a button 36 (blue arrow) to select the activation position and the deactivation position. Ex. 1102, ¶209; Ex. 1103, ¶205; Ex. 1106, 5:3-28, FIG. 3.

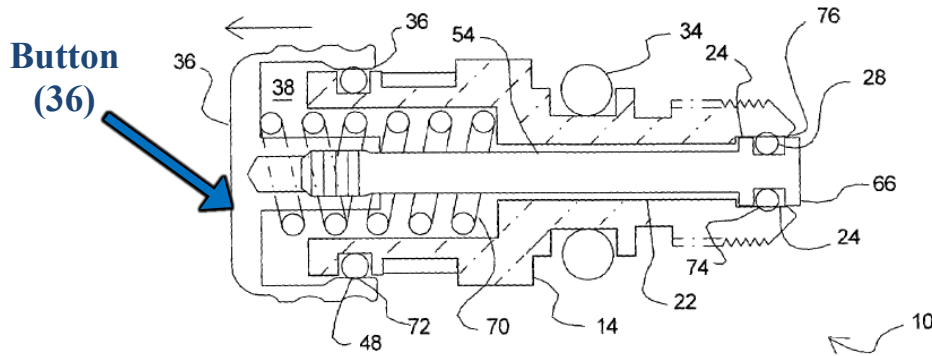


Fig. 3

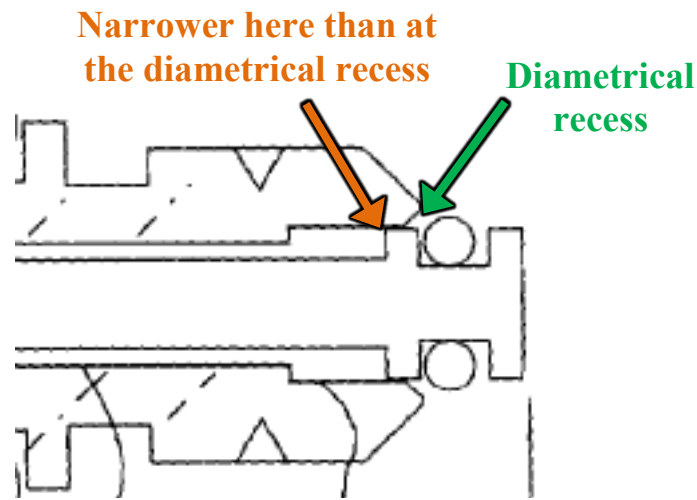
7. Dependent Claim 5

Ceriani in view of *Bruckbauer* discloses all elements of this claim, as discussed above. Alternatively, it would have been obvious to a POSITA to modify *Ceriani* to form *Ceriani*'s lower fork 4 using a die-cast procedure disclosed in *Danter*, as discussed above. Ex. 1102, ¶¶210-211; Ex. 1103, ¶¶206-207.

8. Dependent Claim 6

(a) Claim 6[pre] and Claim 6[a]

Ceriani in view of *Bruckbauer* discloses all elements of this preamble and the following limitation, including *Bruckbauer*'s diametrical recess (green arrow), in that the inner bore diameter is larger at the green arrow than at the orange arrow. Ex. 1102, ¶¶212-213; Ex. 1103, ¶¶208-209; Ex. 1106, FIG. 4.



(b) Claim 6[b] – Claim 6[d]

Ceriani in view of *Bruckbauer* discloses *Bruckbauer*'s sealing o-ring **28** (red arrow) with sealed and unsealed positions. Ex. 1102, ¶¶214-216; Ex. 1103, ¶¶210-212; Ex. 1106, FIGS. 3, 4.

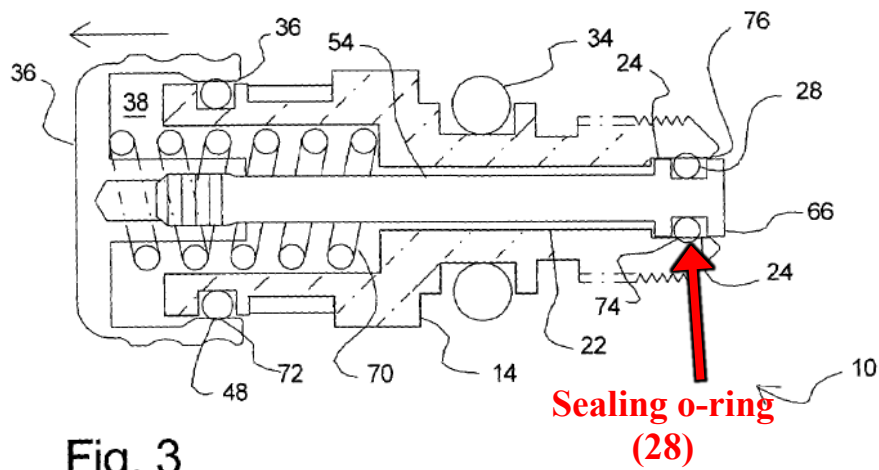
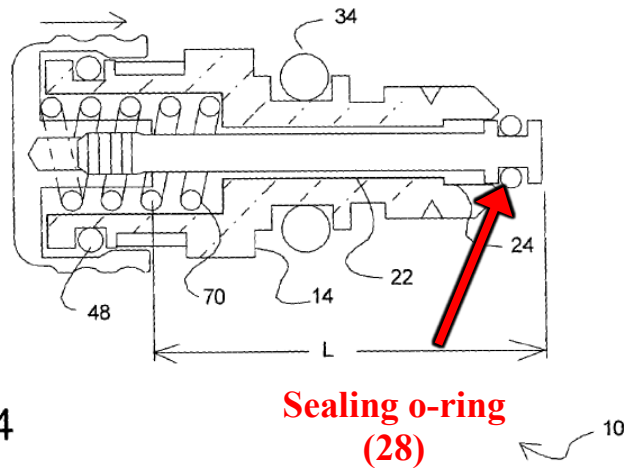
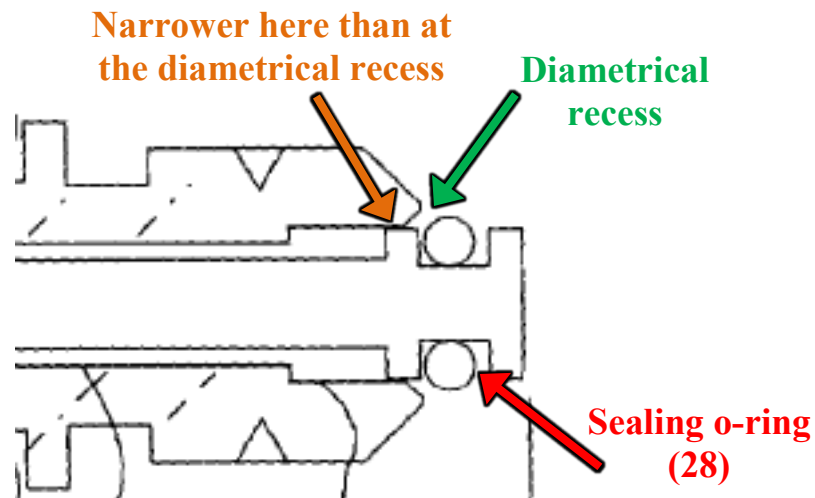


Fig. 3



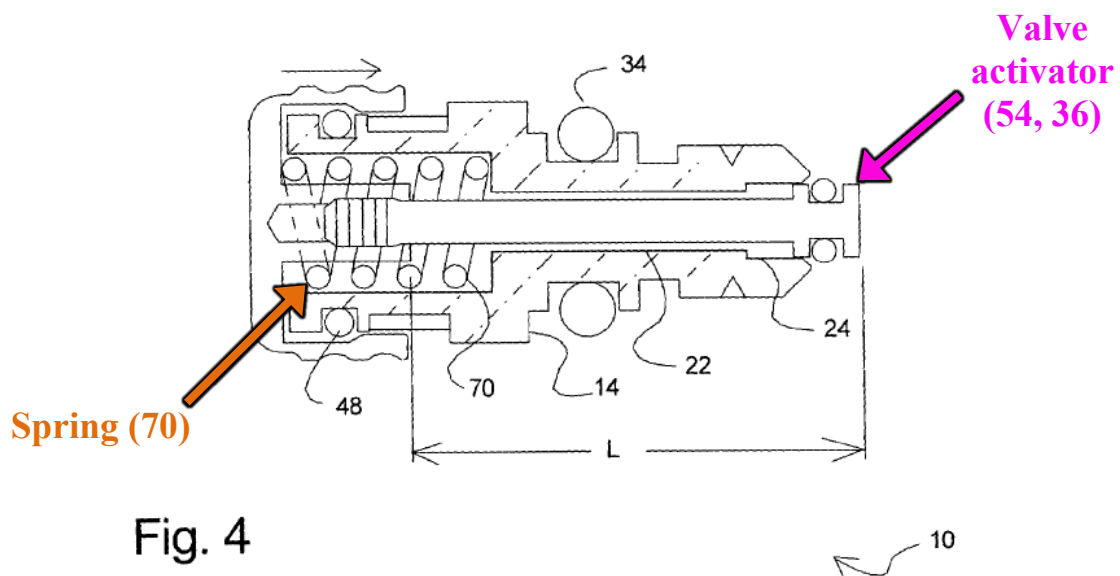
(c) Claim 6[e]

Ceriani in view of *Bruckbauer* discloses *Bruckbauer*'s sealing o-ring **28** (red arrow) having sealed and unsealed positions wherein the sealed position seals against air leaks from *Ceriani*'s lower fork **4** through the die-cast feature, whereupon when *Bruckbauer*'s valve activator **54, 36** is moved from the activation position to the deactivation position, the sealing o-ring **28** moves further into the diametrical recess (green arrow), thereby attaining the unsealed position and letting air pressure by-pass into or out of *Ceriani*'s lower fork **4** via *Ceriani*'s vent hole. Ex. 1102, ¶217; Ex. 1103, ¶213; Ex. 1106, FIGS. 3, 4.



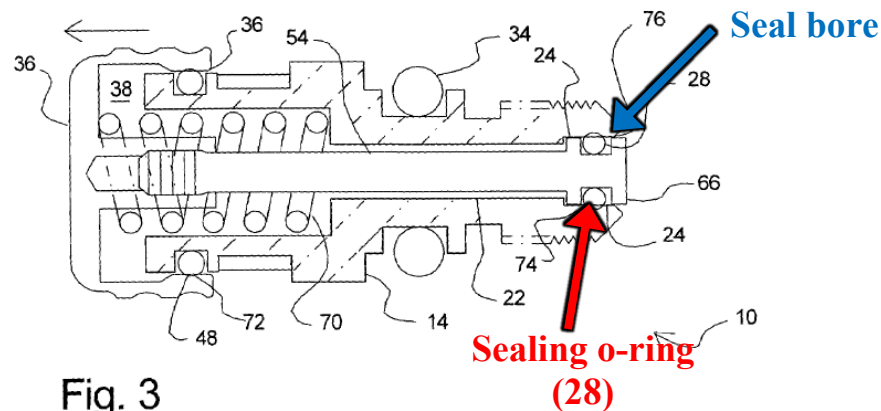
9. Dependent Claim 7

Ceriani in view of *Bruckbauer* discloses *Bruckbauer's* manually operable valve 54, 36, 14, 70 includes a spring 70 (orange arrow) coupled to the valve activator 54, 36 (pink arrow), which spring 70 biases the valve activator 54, 36 toward the first (closed) position. Ex. 1102, ¶218; Ex. 1103, ¶214; Ex. 1106, 5:23-46, FIG. 4.



10. Dependent Claim 8

Ceriani in view of *Bruckbauer* discloses *Bruckbauer's* manually operable valve **54, 36, 14, 70** has a second position having a sealing engagement between the sealing o-ring **28** (red arrow) and a seal bore (blue arrow), wherein when in the sealing engagement, trapped air pressure does not bypass into or out of *Ceriani's* lower fork **4**. Air flow through the manually operable valve **54, 36, 14, 70** may be sealed by squeezing the internal o-ring **28** into the entrance of the aperture at the end of the hollow body **14** when the valve cap **36** is moved into the closed position, thereby preventing entry of dirt, water, or other foreign substances from entering the lower fork **4**. Ex. 1102, ¶219; Ex. 1103, ¶215; Ex. 1106, 5:23-46, FIG. 3.



VI. STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED

Claims 1-8 are unpatentable under 35 U.S.C. §§ 102 and/or 103, so SRAM requests review and cancellation of these claims. Although SRAM does not believe that any of the grounds presented herein are redundant, SRAM requests that the grounds be instituted in the order in which they are presented if the Board declines to institute certain grounds on the basis of redundancy.

VII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. Real Party-in-Interest

The real party-in-interest for this petition is Petitioner SRAM, LLC.

B. Related Matters

Patent Owner asserted the '331 patent against SRAM in a lawsuit captioned *Fox Factory, Inc. v. SRAM, LLC*, Case No. 1:23-cv-00313-RM-KLM (D. Colo.).

C. Lead and Backup Counsel and Service Information

Lead counsel and Backup counsel are identified in the following table:

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SRAM consents to e-mail service at these e-mail addresses.

VIII. GROUNDS FOR STANDING

Petitioner certifies that the ‘331 patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR of the ‘331 patent challenging the patent claims on the grounds identified in this Petition, wherein, *inter alia*, Petitioner waived service of the complaint and summons in the underlying lawsuit regarding the ‘331 patent on August 11, 2022, less than a year before the filing of this Petition.

IX. CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

Petitioner certifies that this Petition complies with 37 C.F.R. § 42.24(d). As calculated by the “Word Count” feature of Microsoft Word 2016, the Petition contains 13,997 words, excluding the words contained in the following: Table of

Contents, Table of Authorities, Mandatory Notices, Certificate of Service, Certificate Under 37 C.F.R. § 42.24(d), Appendix of Exhibits, and Claim Listing.

X. CONCLUSION

Claims 1-8 are unpatentable, so the Board should institute review and cancel these claims. Please charge any required fees to Deposit Account No. 50-0975.

Dated: August 10, 2023

Respectfully submitted,

By: /s/ Michael J. Hickey

Michael J. Hickey, Reg. No. 51,801

CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing Petition for *Inter Partes* Review, the associated Power of Attorney, Petitioner's Explanation of Two Petitions Challenging U.S. Patent No. 9,739,331, and Exhibits 1101-1117 were served by United States Postal Service Priority Mail Express on August 10, 2023, at the following address of record for the subject patent:

FOX C/O WAGNER BLECHER LLP
P.O. Box 1749
Aptos, CA 95001

With a courtesy copies of the same served by United States Postal Service Priority Mail Express on August 10, 2023, at the following address for Patent Owner Fox Factory, Inc.'s litigation counsel in the parallel district court proceeding relating to the subject patent:

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