IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ATELIERS DE LA HAUTE-GARONNE (French Corporation) and F2C2 SYSTEMS S.A.S. (French Corporation),	:	
Plaintiffs,	:	
v.	:	Civil Action No. 09-598-LPS
BROETJE AUTOMATION-USA INC. (Delaware Corporation), BROETJE-AUTOMATION GMBH (German Corporation),	:	
Defendants.	:	

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February 23, 2011
Wilmington, Delaware.

Stark, District Judge:

Plaintiffs, Ateliers de la Haute-Garonne and F2C2 Systems, S.A.S. (collectively, "AHG"), filed this patent infringement action against Defendants, Broetje Automation-USA Inc. and Brötje-Automation GmbH (collectively, "Broetje"), on May 12, 2009, in the United States District Court for the Central District of California. (D.I. 1) The action was transferred to this Court on August 13, 2009. By its Complaint, AHG alleges that Broetje infringes two patents, U.S. Patent No. 5,011,339 (the "'339 patent") and U.S. Patent No. 5,143,216 (the "'216 patent"), both of which relate to dispensing objects, such as rivets, through a tube. The parties briefed their respective positions on claim construction, and the Court conducted a *Markman* hearing on the disputed terms. *See* Transcript Oct. 21, 2010 hearing ("Tr.") (D.I. 76). This Memorandum Opinion provides the Court's construction of the disputed terms.

I. BACKGROUND

A. The Parties

AHG manufactures rivet dispensing systems. Ateliers de la Haute-Garonne is the assignee of the patents-in-suit, which pertain to a method and apparatus for dispensing objects, such as rivets. A rivet is a mechanical fastener used in a variety of applications, including the manufacture of airplanes. Broetje manufactures and sells airplane manufacturing systems, one of which is the Brötje-brand Automated Fastener Feed System, which AHG accuses of infringement.

B. The Technology

Rivets are dispensed using riveting machines commonly comprised of a tube (or cassette containing coiled tubes) which contains the rivets. At the time of the invention, rivets were

typically dispensed through a tube by applying compressed air (a pneumatic force) to the head of the first rivet, which would then act as a piston (a mechanical force) to move the second rivet, which would then act as a piston (a mechanical force) to move the third rivet, and so on, until a rivet was ultimately dispensed. Because the application of mechanical force to each rivet head was not equal, rivets would often flip within the tube, causing jams. The primary way to avoid jams was to limit the number of rivets stored in the tube at any given time. In addition, vertical column tubes were accepted as the best shaped tubes to avoid jams; however, this shape tube only held a limited number of rivets.

C. The Patents-In-Suit

The patents-in-suit were invented by Jean Marc Auriol, the grandson of AHG's founder, Marcellin Auriol, and Phillip Bornes, the son-in-law of Mr. Auriol. Both the '339 and '216 patents bear the same title, "Process for Distribution of Pieces such as Rivets, and Apparatus for Carrying Out the Process," and share substantially the same specification. The '216 patent is a divisional application of the '339 patent. The '339 patent claims a method for carrying out the invention, and the '216 patent claims an apparatus embodying the invention.

The primary goal of the claimed invention is to allow for the storage and dispensing of more rivets while simultaneously reducing the number of jams by "bringing them to be presented one by one, with their axis in an appropriate position at the inlet of a tool or machine where they are to be used . . . ." ('339 patent, col. 2 ll. 6-12) The claimed invention is generally comprised of a tube with grooves or passageways along its inner surface, and stop members at either end for retaining rivets. Under this configuration, when compressed fluid is applied to the tube, it moves along the length of the tube into the grooves, so that equal fluid pressure is asserted on each rivet.

This equality of pressure achieves a precise guiding of the pieces along the tube without jamming. (*Id.* col. 2 ll. 60-66) Thus, the transfer and ultimate expulsion of rivets is produced by the force of the compressed fluid and not by mechanical forces. (*Id.* col. 3 ll. 7-12) The application of equal fluid force, and the absence of the unequal pressure associated with mechanical forces, reduces the number of jams and increases the number of rivets that can be stored at a given time without causing jams. (*Id.*)

D. The Related German Litigation

In related litigation, AHG sued Broetje on the German registration of the counterpart European patent. (D.I. 59, Exh. 3-4) A 3-judge court in Hamburg, Germany (the "German court") rejected AHG's claims of patent infringement and construed the scope of the patent-in-suit consistently with the claim constructions proposed by Broetje here. Specifically, the German court made the following conclusions:

> [T]he patent in suit proceeds from the assumption of "skin-tight" guidance of rivets. . . .
>
> * * *
>
> The patent therefore does indeed proceed on the assumption of ***tight*** guidance of the rivets. It is clearly intended that they should have a considerable area of contact with the wall of the tube.
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> * * *
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> [T]he patent does not allow for any significant play on the part of the rivets.
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> * * *
>
> [D]istribution of the pressure specifically via the groove becomes inconceivable if the rivets have greater "play." This is because, given considerable play between the rivet and the inner wall of the tube, the pressure is distributed within the tube

for the most part independently of the groove.

* * *

The patent therefore proceeds on the assumption of largely "sealed" spaces. Such spaces can, however, only exist if the greatest diameter of the machine components in fact almost exactly corresponds to the diameter of the hollow core.

* * *

[T]he shanks – because of the tight fit – are visually parallel to the longitudinal axis of the tube. The figures precisely do not show the rivets as having any tilt through the availability of play . . . .

(*Id.* at Exh. 10 at 9-11) (emphasis in original) AHG has appealed the decision of the German court.

E. Disputed Claim Terms

1. The '339 patent

The disputed terms to be construed in the '339 patent appear in claims 1, 2, 3, 4, and 6, and are highlighted below:

1. A process for dispensing identical pieces having a symmetry of revolution about an axis, comprising:

providing a tube (2) having a hollow center (2a) and **a shape corresponding to the transverse section of the greatest diameter of the pieces** for assuring **a peripheral guiding** of said pieces at the level of this section,

arranging the pieces **one after another in the interior of the tube (2) with their axes of revolution extending along the longitudinal axis of said tube**

and feeding one end of said tube with a compressed fluid for assuring the transfer of the pieces toward an open dispensing end (2d) of said tube,

admitting the compressed fluid into the one end of the tube behind the piece closest to said one end of the tube

and distributing the fluid along the length of the tube through at least one **longitudinal passageway (2b) on the internal surface of said tube and opening into the hollow center (2a)** thereof for exerting the pressure of the fluid along the hollow center in the **spaces (E) between the pieces**, to the piece (1P) closest to the dispensing end on which said pressure acts for assuring the transfer toward the dispensing end (2d).

2. A process as in claim 1, and including distributing the compressed fluid along the interior of a plurality of **linear grooves (2b)** arranged about the hollow center (2a).

3. A process as in claim 1, and including admitting the compressed fluid into the hollow center through said one end of the tube by means of one or more **grooves** opening freely to the exterior of the dispensing end.

4. A process as in claim 3, and including admitting the compressed fluid into the hollow center of the tube through said one end of the tube (2d), and wherein at least one of said **grooves (2b)** is closed at the dispensing end for emptying only into the hollow center behind the piece closest to the dispensing end.

* * *

6. A process as in claim 1 and including preliminarily orienting the pieces (1) in the tube (2) with **stop members (3, 4)** provided at the ends of the tube, and withdrawing the **stop member (4)** situated at the dispensing end for assuring the dispensing.

2. The '216 patent

The disputed terms to be construed in the '216 patent appear in claims 1 and 2, and are highlighted below:

1. An apparatus for orienting identical pieces, comprising

at least one tube (2) having a hollow center (2a) for housing and guiding a plurality of said pieces **aligned one after another** therein,

at least one **groove (2b)** arranged on the internal surface of the tube in such a manner as **to open into the hollow center** along the length thereof,

and **stop members (3, 4)** situated at the ends of the tube for retaining the pieces,

said tube (2) being filled with said pieces comprising rivets **arranged in a column,**

said rivets having heads such that the **transverse cross section of the heads correspond to the transverse cross section of the tube** and such that the **cross sectional area of the heads substantially equals the cross sectional area of the tube** excluding the at least on [sic] groove.

2. A dispensing apparatus as in claim 1, and wherein said tube (2) includes a plurality of said **grooves (2b)** arranged about its hollow center.

II. Legal Principles Of Claim Construction

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks omitted). Construing the claims of a patent presents a question of law. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-78 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370, 388-90 (1996). "[T]here is no magic formula or catechism for conducting claim construction." *Phillips*, 415 F.3d at 1324. Instead, the court is free to attach the appropriate weight to appropriate sources "in light of the statutes and policies that inform patent law." *Id.*

"[T]he words of a claim are generally given their ordinary and customary meaning . . . [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (internal citations and quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Id.* at 1321

(internal quotation marks omitted). The patent specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

While "the claims themselves provide substantial guidance as to the meaning of particular claim terms," the context of the surrounding words of the claim also must be considered. *Phillips,* 415 F.3d at 1314. Furthermore, "[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment . . . [b]ecause claim terms are normally used consistently throughout the patent . . . ." *Id.* (internal citation omitted).

It is likewise true that "[d]ifferences among claims can also be a useful guide . . . . For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* at 1314-15 (internal citation omitted). This "presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim." *SunRace Roots Enter. Co., v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).

It is also possible that "the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Phillips,* 415 F.3d at 1316. It bears emphasis that "[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (internal quotation marks omitted), *aff'd,* 481

F.3d 1371 (Fed. Cir. 2007).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman,* 52 F.3d at 980. The prosecution history, which is "intrinsic evidence," "consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent." *Phillips,* 415 F.3d at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.*

A court also may rely on "extrinsic evidence," which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman,* 52 F.3d at 980. For instance, technical dictionaries can assist the court in determining the meaning of a term to those of skill in the relevant art because such dictionaries "endeavor to collect the accepted meanings of terms used in various fields of science and technology." *Phillips,* 415 F.3d at 1318. In addition, expert testimony can be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of ordinary skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Id.* Nonetheless, courts must not lose sight of the fact that "expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Id.* Overall, while extrinsic evidence "may be useful" to the court, it is "less reliable" than intrinsic evidence, and its consideration "is unlikely to result in a reliable interpretation of patent claim

scope unless considered in the context of the intrinsic evidence." *Id.* at 1318-19.

Finally, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Renishaw PLC v. Marposs Societa' per Azioni,* 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "'a claim interpretation that would exclude the inventor's device is rarely the correct interpretation.'" *Osram GmbH v. Int'l Trade Comm'n,* 505 F.3d 1351, 1358 (Fed. Cir. 2007). Thus, if possible, claims should be construed to uphold validity. *See In re Yamamoto,* 740 F.2d 1569, 1571 (Fed. Cir. 1984).

III. Construction Of Disputed Terms

A. Effect of the German Court's Decision

The claim construction arguments advanced by Broetje are essentially derived from the words used by the German court in construing the European counterpart to the two patents-in-suit. As counsel for Broetje explained at the hearing, the German court "used the phrase 'tight fit.' They used the phrase 'not having a tilt.' That's the origin of some of the terms that we used to try to get consistency along international boundaries." (Tr. 7) In advancing the German court's claim interpretations here, Broetje's counsel expressly disclaimed a collateral estoppel argument. (Tr. 8) However, Broetje's counsel maintained that the German court's decision is "important extrinsic evidence that you are allowed to look at in this case." (*Id.*)

In response, counsel for Ateliers agreed that the Court "can consider [the German court's opinion] as extrinsic evidence and weigh it for what it is." (Tr. 19) However, Atelier's counsel maintained that the German court's decision is "of marginal value considering the fact that they apply law and foreign law that is completely contrary to U.S. law." (Tr. 19) Specifically,

counsel for Atelier's argued that the German court relied primarily upon the figures described in the patent and, as a result, the German court imported limitations from the figures into the claim language, which is contrary to well-established precedent from the Federal Circuit. (Tr. 18)

At the hearing, the Court inquired into a comparison between German patent law and U.S. patent law. (Tr. 7) Counsel for Broetje responded that "[a]fter *Phillips* . . . they're much closer in that the specification is used to help instruct what the claims mean as opposed to merely looking at an abstract meaning like the way we would have in the old days under *Texas Digital*." (*Id.*) Aside from attorney argument, however, there is no concrete evidence in the record concerning the similarities or differences between U.S. patent law and German patent law. The German court's opinion is at most extrinsic evidence. The determination of what the claim language means in light of the specifications at issue here, under the governing law, is the duty of this Court, and the constructions offered by another court, applying foreign law, have little relevance to that determination. Accordingly, the Court affords little weight to the constructions provided by the German court and will proceed to construe the claim terms at issue here without deference to the German court's decision.

B. The '339 Patent

1. Claim 1: "*shape corresponding to the transverse section of the greatest diameter of the pieces*"

The parties' dispute with respect to this term focuses on the meaning of the word "corresponding," as that word is used in the term "shape corresponding to the transverse section of the greatest diameter of the pieces." AHG contends that the term "corresponding" should be construed in accordance with its plain meaning as "compatible with." Thus, AHG contends that

the "shape corresponding to the transverse section of the greatest diameter of the pieces" means "the shape of the hollow center of the tube is compatible with the greatest diameter of the pieces."

Broteje's primary argument is that the phrase "corresponding to" requires a "tight fit" between the tube and the rivets. Broetje admits that the term "tight fit" is not used in the specification but points out that the German court described the invention in terms of a "tight fit." (Tr. 6-7) In proposing its claim construction, Broetje also relies on the figures of the patent and contends that a "tight" fit requires contact between the rivet and the tube. (Tr. 16) Despite this contact, Broetje acknowledges that there could be some amount of play between the rivet head and the tube and "err[s] on the side of looking to how the German court looked at the scope of the European patent" in proposing that the fit is tight "without significant play." (Tr. 13) Thus, Broetje contends that the term "shape corresponding to the transverse section of the greatest diameter of the pieces" means "having a shape almost the exact same diameter as the rivets (pieces), providing a tight fit without significant play between the rivet head and inner wall."

Reviewing the claim language and specification of the '339 patent, the Court concludes that the phrase "shape corresponding to the transverse section of the greatest diameter of the pieces" should not be limited to a "tight fit" but, instead, should be construed consistent with the definition proposed by AHG. Broetje's "tight fit" limitation has no express support in the specification.[1] Instead, it is essentially derived from the German court opinion and the language

[1]To the extent Broetje relies on the patent's drawings to support its construction, the Court is not persuaded that these drawings should have significant weight in determining the correct claim construction. The specification expressly teaches that the figures are non-limiting

in the specification describing "a cylindrical tube 2 . . . the diameter of which corresponds to that of the largest cross-section of the rivets . . . in such a manner as to contain the rivets and to guide them on their periphery ***with a play of several tenth of a millimeter at the level of this greatest section***." ('339 patent, col. 4 ll. 27-33) (emphasis added) This language describes the preferred embodiment, however, which should not be used to limit the claims absent an express disclaimer or disavowal of the claim's scope, which is not present here. *See Cohesive Techs. Inc. v. Waters Corp.*, 543 F.3d 1351, 1360-1361 (Fed. Cir. 2008).

Moreover, a play of several tenths of a millimeter, as described in the specification, is itself inconsistent with a "tight fit." As AHG points out, the term "tight fit" has a technical meaning. Specifically, a "tight fit" refers to "a fit between mating parts with slight negative allowance requiring light to moderate force to assemble."[2] *McGraw-Hill Dictionary of Scientific and Technical Terms* (4th ed. 1989). While the tenths of millimeters noted in the specification

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"examples" of the claimed invention, and that, in addition to the preferred embodiments, the claimed invention is "capable of still further variation and modification without departing from the spirit of the invention . . ." ('339 patent, col. 6 ll. 50-57) Further, where, as here, there is no suggestion in the specification that the proportions of the figures define the invention, the Federal Circuit has cautioned against their use for such purpose. *See Hockerson-Halberstady Inc. v. Avia Group Int'l*, 222 F.3d 951, 956 (Fed. Cir. 2000) ("[P]atent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."); *see also TI Group Auto Sys., Inc. v. VDO N. Am. LLC*, 275 F.3d 1126, 1136 (Fed. Cir. 2004).

[2]Broetje takes issue with AHG's reliance on technical dictionaries for this and other disputed terms, contending that AHG's argument represents an improper attempt to renew the *Texas Digital* formula for claim construction, which was overruled in *Phillips*. In the Court's view, however, AHG's proposed claim construction for this term is not based on a dictionary definition. Rather, AHG consults a technical dictionary to explain the construction proposed by Broetje. *See also generally Pressure Prods. Medical Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308, 1315 (Fed. Cir. 2010) (stating that courts may rely on dictionary definition "'so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents'") (quoting *Phillips*, 415 F.3d at 1322-23).

are quite small, the notion of negative force associated with a "tight fit" is at odds with even this slight degree of play or space between the rivet head and the tube.

Further, and perhaps most importantly, the "tight fit" construction proposed by Broetje is inconsistent with the purpose and functioning of the claimed invention as described by the specification, read as a whole and in context. As the specification explains, the claimed invention works by distributing pneumatic pressure to the interior of the passageway(s) along the tube so that the pressure on each rivet head or piece is equal. This equal pressure "achieve[s] a precise guiding of the pieces permitting keeping their axis in alignment in the tube, while avoiding the intermediate pieces being subject to forces causing jamming." ('339 patent, col. 2 ll. 64-66) Thus, it is because there is space between the rivets and the tube (such that the fits of the rivets are "compatible" with the tube but not necessarily "tight") that the rivets are able to move through the tube without jamming (as a result of pneumatic force, rather than mechanical force, which is disclaimed in the specification). (*Id.* col.3 ll. 7-10; *id.* col. 1 ll. 35-48) Accordingly, the Court concludes that the phrase "shape corresponding to the transverse section of the greatest diameter of the pieces" means "the shape of the hollow center of the tube is compatible with the greatest diameter of the pieces."

2. Claim 1: "*a peripheral guiding*"

The parties' dispute with respect to this term, too, centers on whether a "tight fit" is required between the tube and rivet. AHG contends that the term "a peripheral guiding" should be construed in accordance with its plain meaning as "provides for guiding of the pieces along the internal surface of the tube." According to AHG, this definition is consistent with the plain meaning of the term "periphery" and with the specification, which does not require the rivet to

tightly fit in the tube "without significant play."

Consistent with its attempt to add a "tight fit" limitation to the claims, Broetje contends that "a peripheral guiding" means "precise guiding of the rivets without significant play between the inner wall and the rivet head." According to Broetje, this construction is consistent with the claim language. Specifically, Broetje contends that

> the claim says this peripheral guiding occurs "at the level of this section" – i.e., at the level of "the transverse section of the greatest diameter of the pieces." In other words, the peripheral guiding occurs at the level of the rivet heads. That can occur only if there is a tight, almost exact fit between the rivet heads and the tube.

(D.I. 58 at 11) Broetje also maintains that its construction is consistent with the specification, which describes an advantage of the invention as "achiev[ing] a precise guiding of the pieces permitting . . . their axes [to be kept] in alignment in the tube." (*Id.*, citing '399 patent, col. 2 ll. 63-66) According to Broetje, the fit must be tight because

> [i]f there were much play between the rivet heads and the tube, then the rivets would not be "precisely" guided, but would be agitated by the air pressure. And they would not maintain one aligned axis; they would tilt.

(*Id.* at 11)

As the Court concluded in the context of the previous claim term, Broetje's "tight fit" limitation is unsupported by the specification. With respect to the "peripheral guidance" term in particular, Broetje's citation of the specification is taken out of context. As the relevant portion of the specification explains:

> in the process of the invention, the pressure is distributed to the interior of the one

> or more passageways along the tube such that the intermediate pieces are under equal pressure, just as their cross-section of greatest diameter, guided by the tube, works as a piston which, in the absence of the passageway, would oppose the equal pressure. Thus there is achieved a precise guiding of the pieces permitting keeping their axes in alignment in the tube, while avoiding the intermediate pieces being subjected to forces causing jamming, the pressure coming to be exerted directly on the first piece which is situated opposite the open distribution extremity.

('339 patent, col. 2 ll. 57-64) Stated another way, the pieces are "guided" in the tube because the air pressure is distributed along the passageway or groove, thereby allowing the rivet heads to be guided along the periphery. There is nothing in the context of this passage, or elsewhere in the specification, that requires a "tight fit" or otherwise suggests that the invention would not be advantageous without a "tight fit." Indeed, it is possible that a "tight fit" may actually cause the jamming that the patent seeks to avoid and, in any event, is more consistent with movement by mechanical forces, which is disclaimed in the patent.

Accordingly, the Court construes the term "a peripheral guiding" to mean "provides for guiding of the pieces along the internal surface of the tube."

3. Claim 1: "*arranging the pieces one after another in the interior of the tube (2) with their axes of revolution extending along the longitudinal axis of said tube*"

The parties' disagreement with respect to this claim term centers on whether the rivets are required to be aligned coaxially in the tube in a stack that does not allow for tilting. AHG contends that nothing in the specification requires the rivets to share a common axis, that this axis be the same as the axis of the tube, or that the rivets not tilt inside the tube. Thus, AHG contends that the term "arranging the pieces one after another in the interior of the tube (2) with their axes of revolution extending along the longitudinal axis of said tube" should be construed

consistent with its plain meaning as "pieces inserted one after another with their axes of revolution extending in the direction of the length of the tube."

In response, Broetje contends that the claim language and the specification require the rivets to be aligned coaxially, meaning that they share a common axis with the tube. In support of this limitation, Broetje directs the Court to the use of the term "aligned" in the claim language, as well as portions of the specification explaining that the invention exhibits "precise guiding permitting ***maintaining the alignment of the axes***" and "***axes*** of revolution extending ***along the longitudinal axis*** of the tube." According to Broetje, "[b]ecause the rivets' plural 'axes' extend along the tube's singular 'axis,' they must be coaxial." Thus, Broetje contends that the term "arranging the pieces one after another in the interior of the tube (2) with their axes of revolution extending along the longitudinal axis of said tube" means "the rivets are aligned in an end-to-end stack, without tilting, with one common axis passing through all rivets, and that axis is the same axis as that of the interior channel of the tube."

After reviewing the claim language and specification, the Court concludes that neither supports limiting the claim to aligning the rivets, without tilting, so that the axis of the rivets is the same axis as the interior of the channel tube. Rather, the specification allows, more broadly, for the axes to be aligned in a "given" or "predefined direction." As described at the outset of the specification, the invention "provides for distribution of the pieces in such a manner that the pieces are presented with their ***axes aligned in a given direction*** in preparation for their utilization . . . ." ('339 patent, col. 1 ll. 7-11) (emphasis added) The specification continues, describing the invention in similar terms:

> The invention is applicable in any event, where identical pieces having a symmetry of revolution are distributed sequentially with their ***axis in a predefined direction*** . . . .
>
> * * *
>
> The present invention proposes to remedy the limitations of known processes for distribution of rivets, or more generally distribution of pieces having a symmetry of revolution about an axis, in order to present each piece with its ***axis aligned in a given direction***.

(*Id.* col. 1 ll. 16-18; *id.* col. 2 ll. 1-5) (emphasis added) This description of the invention is further consistent with "an essential object of the invention," which is "to permit causing the circulation of a very large number of these types of pieces (theoretically without limit) for bringing them to be presented one by one, ***with their axis in an appropriate position*** at the inlet of a tool or machine where they are to be used, for example a riveting machine in the case of rivets." (*Id.* col. 2 ll. 6-12) (emphasis added)

Nothing in the specification requires the "given direction" of the axis to be the same as (or parallel to) the axis of the tube, without any tilting of the aligned rivets, as Broetje contends. In fact, the Court finds Broetje's construction to be inconsistent with the specification, to the extent that the specification discloses at least one embodiment in the form of a coiled tube in which the loaded rivets plainly do not share the same axis (Tr. 29), and one embodiment with a space at least "tenths of a millimeter" between the rivets and the tube ('339 patent, col. 4 ll. 30-33 & Fig. 5). This space, albeit small, allows for some slight degree of tilting when the tube is held in a horizontal position. The Court finds nothing in the specification suggesting a clear attempt to limit the claims in the manner asserted by Broetje.

Moreover, there is evidence in the specification that if the inventors chose to impose such

a limitation they could have done so. In describing the grooves contemplated by the patent, the inventors utilize the term "longitudinal" and expressly state that a "longitudinal groove or passageway" is "a passageway extending in the direction of the length of the tube," adding that such grooves may be "linear (that is, parallel to the axis of the tube) or they may be helical or any other shape." (*Id.* col. 5 ll. 59-61) Although the context of this discussion is different from the context of the alignment of the rivet heads, the Court finds it noteworthy because it demonstrates that the inventors were aware of a difference between a linear or parallel arrangement and other arrangements, which may also "extend in the direction of the tube," yet the inventors placed no such parallel or linear limitation on the description of the axes in the claimed invention.

Accordingly, the Court concludes that the term "arranging the pieces one after another in the interior of the tube (2) with their axes of revolution extending along the longitudinal axis of said tube" means "pieces inserted one after another with their axes of revolution extending in the direction of the length of the tube."

4. Claim 1: "*longitudinal passageway (2b) . . . opening into the hollow center (2a)*"

The parties' dispute with respect to this term centers on whether the claims require that the grooves be channels that are recessed into the tube walls. AHG contends that the term "longitudinal passageway (2b) . . . opening into the hollow center (2a)" means "a passageway which can be of any hollow shape, regardless of the cross-sectional shape of the tube, extending in the direction of the length of the tube." According to AHG, this definition comports with the express definition provided by the patentee in the specification.

Broetje contends that the "longitudinal passageway (2b) . . . opening into the hollow

center (2a)" means "a discrete channel, distinctly recessed from the wall of the main channel." According to Broetje, "[o]nly a channel recessed into the tube wall is capable of 'opening into' the hollow core" and, because the grooves or passageway are formed "***on*** the internal surface" of the tube, Broetje maintains that the channels must be recessed into the tube wall. (D.I. 58 at 15-16) (emphasis added)

After reviewing the claim language and specification, the Court concludes that the construction proposed by AHG is consistent with the lexicon of the inventors and, therefore, controlling. *See Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1380 (Fed. Cir. 2009). In the "Description of the Invention," the specification expressly states: "By the term 'longitudinal passageway' is meant any hollow shape, regardless of the cross-sectional shape, extending ***along*** the wall of the tube, this passageway being able to be linear, helical, etc." ('339 patent, col. 2 ll. 45-48) (emphasis added.) The patent reiterates this definition in the "Detailed Description of Preferred Embodiments," using substantially the same terms: "By 'longitudinal groove or passageway' is meant a passageway extending in the direction of the length of the tube." (*Id.* col. 5 ll. 59-61) The specification further emphasizes that the passageway can be of any shape or cross-section:

> The longitudinal grooves or passageways which permit the air pressure to be established all along the length of the tube ***may be of any cross-section*** produced by any process (molding, extrusion, machining, etc.). They may be liner (that is parallel to the axis of the tube) or ***they may be helical or any other shape***.

(*Id.* col. 5 ll. 54-59) (emphasis added)

Broetje's proposed construction improperly implies that "*along* the wall of the tube"

means "*in* the wall of the tube," and there is no evidence that the term "along" should be equated with the term "in." (Tr. 49) Broetje's proposed construction is incorrect because it conflicts with the express definition provided by the inventors and the plain meaning of the words in the specification like "along." It is also incorrect because it excludes two embodiments described in the patent, which depict grooves not recessed into the tubing.[3] ('339 patent, col. 6 ll. 12-15 & Fig. 9a & Fig. 7a) As counsel for AHG explained at the hearing and counsel for Broetje acknowledged, a groove can be formed by the joint between the corrugated wall and the plates. (Tr. 24, 44, 50-51) In the Court's view, such a groove, as depicted in Figures 9a and 7a, is not recessed into the tube wall.

Accordingly, the Court concludes that the term "longitudinal passageway (2b) . . . opening into the hollow center (2a)" means "a passageway which can be of any hollow shape, regardless of the cross-sectional of the tube, extending in the direction of the length of the tube."

5. Claim 1: "*the spaces (E) between the pieces*"

The parties' central dispute with respect to this claim term is whether the "spaces (E)" need to be sealed except for the groove. It appears to the Court that this argument is a variation on the "tight fit" limitation sought by Broetje. AHG contends that there is no support in the claim language or specification for the proposition that any space between the tube and the shaft of the rivet be largely sealed. Thus, AHG contends that the term "the spaces (E) between the pieces" means "the opening, if any, separating the pieces."

Broetje contends that the specification requires a

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[3] *Hyperphrase Technologies, LLC v. Google, Inc.*, 260 Fed. Appx. 274 (Fed. Cir. 2007) ("A claim construction that excludes an embodiment of the relevant claim(s) is typically incorrect.").

> tight fit between tube and rivets with grooves avoiding jamming by providing pressure to the spaces (E) between rivets. This characterization makes sense only if the spaces (E) are sealed but for the grooves. Otherwise, jamming would not be a problem. And air would reach the spaces (E) via the hollow core itself – making the grooves superfluous.

(D.I. 58 at 17-18) Thus, Broetje contends that the term "spaces (E) between the pieces" means "the largely sealed spaces between the inner wall of the tube and the shank of the rivets."

Reviewing the claim language and specification, the Court concludes that Broetje's proposed limitation of "largely sealed spaces" is unsupported by the specification. In fact, the specification teaches "play of several tenth of a millimeter," which is itself inconsistent with the sealing of the spaces advocated by Broetje,[4] and, as AHG points out, the specification discloses embodiments that do not contain sealed spaces. ('339 patent, Fig. 7 & Fig. 9a)

Accordingly, the Court concludes that the term "the spaces (E) between the pieces" means "the opening, if any, separating the pieces."

6. Claim 2: "*linear grooves(2b)*"

The parties' dispute with respect to this claim term is a variation on their previous dispute concerning whether the passageways/grooves must be recessed into the tube walls. AHG contends that the term "linear grooves" should be defined as "passageways extending along the parallel axis of the tube." AHG contends that this construction is consistent with the meaning of the term "linear" as provided by the inventors in the specification.

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[4]The Court acknowledges that Broetje's proposed definition refers to "largely sealed spaces." Given that the specification speaks in terms of millimeters of space, the Court further concludes that Broetje's claim construction interjects imprecision into the claim terms, which confuses, rather than clarifies, their meaning.

Broetje seeks to import into this claim term its recessed channel limitation by defining "linear grooves (2b)" using the term "longitudinal passageways," as that term is used in Claim 1 of the '339 patent. Thus, Broetje contends that the term "linear grooves (2b)" means "longitudinal passageways that are parallel to the axis of the tube."

As with the Court's previous construction of the related term "longitudinal passageways," the Court finds no support in the specification for the limitations advanced by Broetje in its proposed construction of this term. As AHG points out, the inventors, in the context of discussing "longitudinal grooves or passageways," expressly defined "linear" as "parallel to the axis of the tube." ('399 patent, col. 5 ll. 58) AHG's proposed construction is consistent with the lexicon of the inventors. Therefore, the Court concludes that the term "linear grooves (2b)" means "passageways extending along the parallel axis of the tube."

7. Claims 3, 4: "*grooves*" "*grooves(2b)*"

These terms are similar to the term "linear grooves (2b)," and the parties' dispute is also similar. AHG contends that the terms "grooves" or "grooves (2b)," as used in claims 3 and 4 of the '339 patent, should be defined simply as "passageways." Broetje seeks to impose the recessed channel requirement by contending that "grooves" and "grooves (2b)" should be defined as "longitudinal passageways that are parallel to the axis of the tube."

As the Court previously concluded, there is no support in the specification for Broetje's proposed construction, which implies a limitation that the "grooves" be recessed into the tube walls. The specification uses the terms "groove" and "passageway" interchangeably. (*Compare* '339 patent, col. 4 ll. 49-53 ("On the internal surface of the tube 2 are arranged three passageways such as 2b . . .") *with id.* col. 5 ll. 22-24 ("In the invention the compressed air is

distributed by the grooves 2b . . . .")) "The interchangeable use of the two terms is akin to a definition equating the two." *Edward Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1329 (Fed. Cir. 2009). Moreover, the absence of the modifying term "linear," which was used in claim 1 to describe the "grooves," further implies that the "grooves" and "grooves (2b)" of claims 3 and 4 are not required to be parallel to the axis of the tube.

Accordingly, the Court concludes that the term "grooves" or "grooves (2b)," as used in claims 3 and 4 of the '339 patent, means "passageways."

8. Claim 6: "*stop members (3,4)*" "*stop member 4*"

The parties' dispute with respect to the terms "stop members (3,4)" and "stop member 4" centers on whether the terms are means-plus-function terms. AHG contends that the terms are not means-plus-function terms and should be defined as "components at the ends of the tube that retain the pieces."

Broetje contends that "stop members (3,4)" and "stop member 4" are means-plus-function limitations that should be construed in accordance with 35 U.S.C. 112, ¶ 6. Specifically, Broetje contends that "stop member 3" is "a connecting ferrule leading to a compressed air conduit and forming in the hollow center a stop shoulder." (D.I. 58 at 18) Broetje contends that "stop member 4" is:

> a ferrule which carries a removable cotter pin to retain the first rivet. This ferrule is shaped to be able to cooperate with a tool or a riveting machine. The cotter pin is removed before distribution of the rivets.
>
> A ferrule is a ring or cap, usually of metal, put around the end of a post, cane, or the like, to prevent splitting.
>
> A cotter pin is a split pin inserted through holes in two or more pieces and bent at

the ends to fasten the pieces together.

(*Id.*)

Pursuant to 35 U.S.C. § 112, "an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112. Section 112, ¶ 6 applies only to "purely functional limitations that do not provide the structure that performs the recited function." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1023 (Fed. Cir. 2006). In determining whether a claim element is subject to Section 112, ¶ 6, the Court must consider the manner in which the claim element is phrased. If the claim element utilizes the word "means," a presumption arises that the claim is employing means-plus-function language and that Section 116, ¶ 6 applies. *See id.* If the word "means" is not utilized, a contrary presumption arises that the claim element is not a means-plus-function term. *See id.* This presumption "can be rebutted by showing that the claim term element recite[s] a function without reciting sufficient structure for performing that function." *Id.* (internal quotation marks omitted).

Because the term "stop member" does not utilize the word "means," it is presumed that the claim term is not in means-plus-function format. Broetje contends that it has rebutted this presumption, because the claim term recites a stopping function, without reciting any structure for performing the function. According to Broetje, the missing structures must be supplied by reference to the specification, because a "stop member" is not a recognized name for a structure

in the art. In support of its position, Broetje contends that the specification discloses two different structures which are considered stop members. (D.I. 58 at 19-20)

After reviewing the specification as it relates to these terms, the Court concludes that Broetje has not overcome the presumption that "stop member" is not a means-plus-function term. In reaching this conclusion, the Court is persuaded that the manner in which the term "stop member" is used in the specification makes it clear that a "stop member" is not purely functional, but, rather, is a structural component. For example, the specification explains that the "stop members . . . will be placed at [the] extremities [of the tube]" and that "the stop member situated at the distribution end" can be removed. ('339 patent, col. 3 ll. 14-16, 20) These references to the location and relative position of the stop members suggest to the Court that the stop members are appropriately considered structures.[5] *See Phillips*, 415 F.3d at 1311 ("The claim characterizes the baffles as extending inwardly from the steel shell walls, which plainly implies that the baffles are structures."); *DePuy Spine Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1023 (Fed. Cir. 2006) (holding that "compression" member was not means-plus function term where claim required "compression member" to "fit inside the cylindrical opening and be of sufficient size to exert a force on the screw head, which implies structure").

Accordingly, the Court concludes that the terms "stop members (3,4) and "stop member

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[5]The Court reaches this conclusion without reference to the scientific dictionary definition of "member" cited by AHG, but notes that this definition also supports the Court's view that the term is appropriately considered to be a structure. Indeed, the Federal Circuit itself has recognized that a "member" is considered a structure, using the same dictionary definition advanced by AHG here. *CCS Fitness v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). Although *CCS Fitness* predates *Phillips*, the Court is not persuaded that the dictionary definition advanced by AHG to support its argument that the "stop member" is a structure is inconsistent with the specification, given that the specification explains the location of the stop member, which also implies that it is a structure. *Phillips*, 415 F.3d at 1311.

4" mean "components at the ends of the tube that retain the pieces."

B. The '216 Patent

1. Claim 1: "*aligned one after another*"

The parties' dispute with respect to this claim term is identical to their dispute concerning clam 1 of the '339 patent, i.e., whether the claims require the rivets to be aligned coaxially in a stack without tilting. AHG contends that the term "aligned one after another" should not be read to impose a coaxial alignment without tilting and should, instead, be construed in accordance with its plain meaning as "pieces are in line one after the other."

Broetje contends that this term should be construed identically to the claim term "one after another in the interior of the tube (3) with their axes of revolution extending along the longitudinal axis of said tube" from claim 1 of the '399 patent. Thus, Broetje contends that the phrase "aligned one after another" means "the rivets are aligned in an end-to-end stack, without tiling, with one common axis passing through all rivets, and that axis is the same axis as that of the interior channel tube."

In the context of the similar terminology in the '339 patent, the Court concluded that the claims should not be limited to a coaxial alignment without tilting. The rationale provided by the Court in rejecting these limitations in claim 1 of the '339 patent applies here with equal force. The Court finds no support in the specification for the construction proposed by Broetje.

Accordingly, the Court concludes that the term "aligned one after another" should be construed consistently with its plain meaning to mean "pieces are in line one after the other."

2. Claim 1: "*grooves 2(b) . . . to open into a hollow center*"

The parties' dispute with respect to this claim term focuses on whether the term should be

limited to recessed grooves in the tube wall and whether those passageways must be parallel to the axis of the tube. This term is similar to the term "longitudinal passageways . . . to open into a hollow center" from claim 1 of the '339 patent; the parties' proposed constructions with respect to the instant dispute are similar to their positions in connection with that earlier dispute. AHG contends that the term "grooves 2(b) . . . to open into a hollow center" should be construed to mean "any passageway, regardless of the cross-sectional shape of the tube, extending along the wall of the tube, this passageway being able to be linear, helical etc. and opening into the hollow center of the tube." Consistent with its proposed definition of the terms "grooves" and "linear grooves" from claim 1 of the '339 patent, Broetje contends that this term should be construed as "longitudinal passageways that are parallel to the axis of the tube" with the understanding that "longitudinal passageways" is defined as a "discrete channel, distinctly recessed from the wall of the main channel."

In the context of the similar term used in claim 1 of the '339 patent, the Court concluded that the specification did not support the limitations advanced by Broetje and that the claim was correctly construed in the manner proposed by AHG. The Court's rationale applies equally here.

Accordingly, the Court concludes that the term "grooves 2(b) . . . to open into a hollow center" means "any passageway, regardless of the cross-sectional shape of the tube, extending along the wall of the tube, this passageway being able to be linear, helical etc. and opening into the hollow center of the tube."

3. Claim 1: "*stop members (3,4)*"

For the reasons discussed in the context of the identical term in claim 6 of the '339 patent, the Court concludes that "stop members (3,4)" is not a means-plus-function term. The

Court further concludes that "stop members (3,4)" means "components at the ends of the tube that retain the pieces."

4. Claim 1: "*arranged in a column*"

The parties' dispute with respect to this claim term is the same as their dispute concerning the term "aligned one after another" in claim 1 of the '216 patent and as the term "one after another in the interior of the tube with their axes of revolution extending along the longitudinal axis of said tube" in claim 1 of the '339 patent. Specifically, the parties disagree as to whether the rivets must be aligned "without tilting" along the "same axis as that of the interior channel of the tube." AHG contends that the term "arranged in a column" should be construed in accordance with its plain meaning as "rivets placed one after the other in a tube." Broetje's proposed construction is identical to the one it previously advanced in the context of the related terms, i.e., that "the rivets are aligned in an end-to-end stack, without tiling, with one common axis passing through all rivets, and that axis is the same axis as that of the interior channel of the tube."

For the reasons discussed in the context of the related terms in claims 1 of the '216 and the '339 patents, the Court concludes that the limitations proposed by Broetje are unsupported by the specification, and that the term "arranged in a column" is appropriately construed in accordance with its plain meaning. Accordingly, the Court concludes that the term "arranged in a column" means "rivets placed one after the other in a tube."

5. Claim 1: "*transverse cross section of the heads correspond to the transverse cross section of the tube such that the cross sectional area of the heads substantially equals the cross sectional area of the tube*"

The parties' dispute with respect to this claim term centers on whether the claims require

a "tight fit" between the tube and rivets. AHG contends that this term should be construed in accordance with its ordinary meaning and the description of the invention provided in the specification, so that "transverse cross section of the heads correspond to the transverse cross section of the tube such that the cross sectional area of the heads substantially equals the cross sectional area of the tube" means "the shape of the head of the rivet is compatible with the shape of the hollow center of the tube such that the cross sectional area of the head of the rivet is of sufficient size as compared to the cross sectional area of the hollow core of the tube such that there is sufficient space between the rivet and the surface of the hollow core to permit the rivet to move without difficulty from upstream to downstream as a result of the compressed fluid."

Broetje advances the same arguments and proposed construction as it advanced in the context of the term "shape corresponding to the transverse section of the greatest diameter of the pieces" used in claim 1 of the '339 patent. Thus, Broetje contends that the term "transverse cross section of the heads correspond to the transverse cross section of the tube such that the cross sectional area of the heads substantially equals the cross sectional area of the tube" means "having a shape almost the exact same diameter as the rivets (pieces) providing a tight fit without significant play between the rivet head and inner wall."

For the reasons discussed in the context of the similar claim term used in claim 1 of the '339 patent, the Court concludes that the tight fit limitation advanced by Broetje is unsupported by the specification. Broetje suggests that the phrase "substantially equal" supports its "tight fit" limitation; however, the term "substantially equal" does not mean exactly equal and is "commonly used in patent claims to avoid applying a strict numerical boundary to the specified parameters." *Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298,

1310-11 (Fed. Cir. 2003). In the Court's view, the specification and description of the invention require only that the rivets be of sufficient size to pass through the tube without difficulty and without relying on mechanical force.

Accordingly, the Court concludes that the term "transverse cross section of the heads correspond to the transverse cross section of the tube such that the cross sectional area of the heads substantially equals the cross sectional area of the tube" means "the shape of the head of the rivet is compatible with the shape of the hollow center of the tube such that the cross sectional area of the head of the rivet is of sufficient size as compared to the cross sectional area of the hollow core of the tube such that there is sufficient space between the rivet and the surface of the hollow core to permit the rivet to move without difficulty from upstream to downstream as a result of the compressed fluid."

6. Claim 2: "*grooves (2b)*"

This claim term is identical to the term used in claims 3 and 4 of the '339 patent, and the parties advance identical proposed constructions and arguments as they did previously. Accordingly, for the reasons discussed in the context of claims 3 and 4 of the '339 patent, the Court concludes that the term "grooves (2b)" means "passageways."

IV. CONCLUSION

For the reasons discussed, the Court has construed the disputed terms in the '339 and '216 patents as provided herein. An Order consistent with this Memorandum Opinion will be entered.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ATELIERS DE LA HAUTE-GARONNE (French Corporation) and F2C2 SYSTEMS S.A.S. (French Corporation),	:	
Plaintiffs,	:	
v.	:	Civil Action No. 09-598-LPS
BROETJE AUTOMATION-USA INC. (Delaware Corporation), BROETJE-AUTOMATION GMBH (German Corporation),	:	
Defendants.	:	

ORDER

At Wilmington, this 23rd day of February 2011, for the reasons set forth in the Memorandum Opinion issued this date;

IT IS HEREBY ORDERED that:

1. The following terms in United States Patent No. 5,011,339 are assigned the following meanings:

a. The term "shape corresponding to the transverse section of the greatest diameter of the pieces" means "the shape of the hollow center of the tube is compatible with the greatest diameter of the pieces."

b. The term "a peripheral guiding" means "provides for guiding of the pieces along the internal surface of the tube."

c. The term "arranging the pieces one after another in the interior of the tube (2) with their axes of revolution extending along the longitudinal axis of said tube" means

"pieces inserted one after another with their axes of revolution extending in the direction of the length of the tube."

d. The term "longitudinal passageway (2b) . . . opening into the hollow center (2a)" means "a passageway which can be of any hollow shape, regardless of the cross-sectional of the tube, extending in the direction of the length of the tube."

e. The term "the spaces (E) between the pieces" means "the opening, if any, separating the pieces."

f. The term "linear grooves (2b)" means "passageways extending along the parallel axis of the tube."

g. The term "grooves" or "grooves (2b)" means "passageways."

h. The terms "stop members (3,4) and "stop member 4" mean "components at the ends of the tube that retain the pieces."

2. The following terms in United States Patent No. 5,143,216 are assigned the following meanings:

a. The term "aligned one after another" means "pieces are in line one after the other."

b. The term "grooves 2(b) . . . to open into a hollow center" means "any passageway, regardless of the cross-sectional shape of the tube, extending along the wall of the tube, this passageway being able to be linear, helical etc. and opening into the hollow center of the tube."

c. The term "stop members (3,4)" means "components at the ends of the tube that retain the pieces."

d. The term "arranged in a column" means "rivets placed one after the other in a tube."

e. The term "transverse cross section of the heads correspond to the transverse cross section of the tube such that the cross sectional area of the heads substantially equals the cross sectional area of the tube" means "the shape of the head of the rivet is compatible with the shape of the hollow center of the tube such that the cross sectional area of the head of the rivet is of sufficient size as compared to the cross sectional area of the hollow core of the tube such that there is sufficient space between the rivet and the surface of the hollow core to permit the rivet to move without difficulty from upstream to downstream as a result of the compressed fluid."

f. The term "grooves (2b)" means "passageways."

UNITED STATES DISTRICT JUDGE