United States District Court,
E.D. North Carolina, Western Division.

TROXLER ELECTRONIC LABORATORIES, INC,
Plaintiff.
v.
PINE INSTRUMENT COMPANY,
Defendant.

No. 5:01-CV-349-H(3)

Sept. 21, 2005.

Michael Shields Connor, Richard M. McDermott, Alston & Bird, LLP, Charlotte, NC, for Plaintiff.

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MEMORANDUM and RECOMMENDATION

WILLIAM A. WEBB**, United States Magistrate Judge.**

This matter is before the Court upon Plaintiff Troxler Electronic Laboratories, Inc.'s ("Troxler") and Defendant Pine Instrument Company's ("Pine") Motions Requesting Claim Construction of U.S. Patents 5,323,655 and 5,606,133. [DE-30, 37, 39.] The patents-in-suit deal with asphalt testing machines, which through gyration and compaction, simulate the physical response of asphalt material to vehicle load forces.

Troxler is the assignee of the U.S. Patent 5,323,655 ("'655 patent"). **[DE-1, Ex. A.]** As such, Troxler alleges Pine "is infringing or is contributing to or inducing the infringement of one or more claims of the '655 patent by making, using, selling and or offering for sale in this judicial district, and elsewhere in the United States, infringing product." **[DE-1 at 2.]**

Pine is the assignee of the U.S. Patent 5,606,133 ("'133 patent"). **[DE-20, Ex. A.]** Defendant Pine counterclaims Troxler alleging Troxler "has been and is directly infringing the '133 patent in this District and elsewhere in the United States, by making, using, selling and offering for sale products that infringe the '133 patent." **[DE-20 at 9.]**

On 11 May 2001, Troxler filed suit against Pine alleging infringement by Pine of the '655 patent. **[DE-1.]** On 19 February 2002, Pine answered Troxler's Complaint denying infringement of the '655 patent, seeking judgment that each Claim of the '655patent is invalid, and counterclaiming against Troxler, alleging infringement by Troxler of the '133 patent. **[DE-20.]** By separate motions, Troxler and Pine moved this Court for claim construction pursuant to Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (*en banc*), *aff'd,* 517 U.S. 370, 387 (1996), requesting the Court to determine as a matter of

law the disputed claim elements of the two patents-in-suit, U.S. Patent No.5,323,655 and U.S. Patent No.5,606,133. **[DE-30, 37, 39.]** A *Markman* hearing was held on 26 and 27 August 2004 before this Court. Subsequently, Troxler and Pine each filed supplemental briefs to aid the Court in claim construction. **[DE-113,114.]** As such, this matter is now ripe for adjudication.

Claim Construction

Claim construction is "the process of giving proper meaning to the claim language," Abtox, Inc. v. Exitron. Corp., 122 F.3d 1019, 1023 (Fed.Cir.1997), and must always begin with the patent itself. Phillips v. AWH Corp, 415 F.3d 1303 (Fed.Cir.2005); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996) ("[I]n interpreting an asserted claim, the court should look first to the intrinsic evidence of record."); Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (*en banc*), *aff'd,* 517 U.S. 370 (1996). First, the court looks to "the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Vitronics Corp., 90 F.3d at 1582. This is so because "the claims made in the patent are the sole measure of the grant." Altoona Publix Theatres v. Am. Tri-Ergon Corp., 294 U.S. 477, 487 (1935).

The words in a claim are generally given their ordinary and customary meaning, unless the patentee has chosen to act as his own lexicographer. The special definition, however, must be clearly stated in the patent specification or file history. Hoechst Celanes Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed.Cir.1996).

In cases where the patentee has not acted as his own lexicographer, the Federal Circuit has made clear that "[t]he ordinary and customary meaning of a claim term 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." Phillips, 415 F.3d at 1313. In some cases, the ordinary meaning of a term as understood by a person of skill in the art is "readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id*. "In such circumstances, general purpose dictionaries may be helpful." *Id*. While a court is free to use the dictionary which best defines a term in context, there is a preference for contemporaneous dictionaries. Intell-A-Check Corp. v. Autoscribe Corp., 346 F.Supp.2d 698, 703 (D.N.J.2004) ("[S]ince the ordinary meaning of words may change over time, the Court must limit its analysis to dictionaries and treatises that are informative of the ordinary meaning of the Claim terms as of the time the patent issued.").

However, in most cases, the ordinary meaning of a term is not readily apparent and it becomes necessary to review the specification, prosecution history, and "extrinsic evidence concerning relevant specific principles, the meaning of technical terms, and the state of the art." Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1116 (Fed.Cir.2004); Vitronics Corp., 90 F.3d at 1582. "The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." Markman, 52 F.3d at 979. "In most cases, the best source for discerning the proper context of claim terms is the patent specification wherein the patent applicant describes the invention." Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1360 (Fed.Cir.2004)

Moreover, "[e]ven when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents." Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed.Cir.2004).

"Thus, the 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., 90 F.3d at 1582. Nevertheless, despite the importance of the specification, "particular embodiments appearing in the written description will not be used to limit claim language that has broader effect." Innova, 381 F.3d at 1117.

Additionally, Congress has allowed patentees the ability to express their claims in functional language, rather than structural language:

[a]n 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. s. 112 para. 6 (2000).

Such limitations are generally known as "means plus function" or "step plus function" limitations. Through use of means plus function limitations, patent applicants are permitted to claim an element of a combination functionally, without reciting structures for performing those functions. Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1371 (Fed.Cir.2003). "Whether the language of a claim is to be interpreted according to 35 U.S.C. s. 112 para. 6, i.e., whether a claim limitation is in means-plus-function format, is a matter of claim construction and is thus a question of law." Apex Inc., 325 F.3d at 1370 (internal citation omitted).

Ordinarily, the question whether a limitation invokes s. 112 para. 6 is not difficult. Greenberg v. Ethicon Endo-Surgery, 91 F.3d 1580, 1582 (Fed.Cir.1996). "Claim drafters conventionally use the preface 'means for' (or 'step for') when they intend to invoke s. 112 para. 6, and there is therefore seldom any confusion about whether s. 112 para. 6 applies to a particular element." *Id*. It would be improper to conclude, however, that s. 112 para. 6 is triggered only if the claim uses the word "means." *Id*. at 1584; Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir.1996), *cert. denied,* 522 U.S. 812 (1997). Nonetheless, the use of the term 'means' has come to be so closely associated with 'means plus function' claiming, it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes s. 112 para. 6 and that the use of a different formulation generally does not. Greenberg, 91 F.3d at 1584.

The question in discerning whether s. 112 para. 6 applies, then, is "whether, in the selection of claim language, the patentee must be taken to have exercised that option." *Id*. The court must decide this question on an element-by-element basis, based upon the patent and the prosecution history. Cole, 102 F.3d at 531. A claim falls outside the ambit of s. 112 para. 6 if it recites a "definite structure which performs the described function." *Id.; Al-* Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318 (Fed .Cir.1999) ("The presumption that s. 112 para. 6 applies is overcome if the claim itself recites sufficient structure or material for performing the claimed function."). Thus, the mere fact that a particular mechanism or structure is defined in functional terms "is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of s. 112 para. 6." Greenberg, 91 F.3d at 1583. In fact, in the absence of "means for" language, the court presumes that s. 112 para. 6 does not apply. Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354 (Fed.Cir.2004) ("[T]he presumption flowing from the absence of the term "means" is a strong one that is not readily overcome."). As to this point, The Federal Circuit has left little doubt:

It is not surprising that we have seldom held that a limitation not using the term "means" must be considered

to be in means-plus-function form. In fact, we have identified only one published opinion since *Greenberg* in which we have done so, and that case provides a useful illustration of how unusual the circumstances must be to overcome the presumption that a limitation lacking the word "means" is not in means-plus-function form.

Id.

After determining that a means-plus-function limitation is at issue, the court must undertake a two-step process to identify and construe that limitation.

The first step in the construction of a means-plus-function claim element is to identify the particular claimed function. The second step in the analysis is to look to the specification and identify the corresponding structure for that function. Under this second step, structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.

Medical Instrumentation and Diagnostics Corp. v. Elekta, 344 F .3d 1205, 1210 (Fed.Cir.2003) (internal citations omitted).

As an aid in determining whether sufficient structure is in fact recited by a term used in a claim limitation, the court should determine whether the "term, as the name for structure, has a reasonably well understood meaning in the art." Greenberg, 91 F.3d at 1583 (applying this test to the term "detent mechanism"). If s. 112 para. 6 applies, then the court must follow the guidelines to claim construction specified in the statute: "such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. s. 112 para. 6.

After a careful review of the file, record and proceedings and having been fully advised by the parties of their respective positions, FN1 the Court will construe the disputed claim limitations. In so doing, the Court will be guided by these interpretive standards.

FN1. The *Markman* hearing in this case was held prior to the Federal Circuit's decision to vacate the opinion in Phillips v. AWH Corp., 363 F.3d 1207 (Fed.Cir.2004) and grant a rehearing *en banc*. As a consequence, many of the arguments advanced by the parties are derived from or depend on general purpose dictionaries. These arguments relied on the discussion in Texas Digital Systems, Inc. v. Telegenics, Inc., 308 F.3d 1193, 1203(Fed.Cir.2002):
As resources and references to inform and aid courts and judges in the under-standing of technology and terminology, it is entirely proper for both trial and appellate judges to consult [dictionaries, encyclopedia and treatises, publically available at the at the time the patent issued] at any stage of a litigation regardless of whether they have been offered by a party in evidence or not.

Phillips called into question the continuing viability of the *Texas Digital* methodology.
I. THE '655 PATENT

The '655 patent describes an apparatus and method for compacting a material sample, confined in a mold, by the application of a compressive force while the mold is simultaneously gyrated.

A. Base

The parties dispute the meaning of the limitation "base." Troxler proposes that "base" be construed as "a structure that provides support or bears stress exerted by a force or pressure." Pine's proposed construction of "base" is "the foundation or support structure located at the bottom of the apparatus." The central dispute is whether "base" connotes a bottom orientation or is position neutral.

This Court seeks a term's usage in the ordinary and accustomed meaning of the words amongst persons of ordinary skill in the relevant art at the time of invention. Phillips, 415 F.3d at 1313; *Rexnord Corp.,* 274 F.3d at 1342. The ordinary meaning of the limitation "base" as understood by a person of skill in the art is "readily apparent even to lay judges, and claim construction in [this case] involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1313. To determine whether the patentee deviated from the ordinary meaning and gave the term a novel or different meaning, it is appropriate to consult the intrinsic record.

"Base" appears in Claims 1, 2, 3, 18, 19, and 20 of the '655 patent and is used consistently throughout these claims. Claim 1, which is representative, provides:

A compactor apparatus comprising: a cylindrical mold having a central longitudinal axis and a first open end for receiving material to be compacted; a ram mounted for movement into the first open end of said mold for applying a compressire [sic] force to the material in the mold along an axis of compression to compact the material; and a base positioned to support a second end of said mold as the axial compressire [sic] force is applied thereto; said base including means for moving said second end of the mold so that the central longitudinal axis of the mold moves from an initial neutral position in which the central longitudinal axis of the mold is collinear with the axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly offset from the axis of compression and orbits thereabout at said second end of said mold.

The Federal Circuit has made clear that "the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The 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*). In this case, the patentee has invented an apparatus for compaction and gyration, which includes "a cylindrical mold having a central longitudinal axis." Claim 1, Col. 11, ll. 23-24 (emphasis added). The term longitudinal has a well understood meaning; it means "top-to-bottom" as opposed to transverse which means "side to side." Thus, the mold, as claimed in Claim 1, is vertically oriented.

Claim 1 also teaches that the "base" is "positioned to support a second end of said mold" and includes "means for moving said second end of the mold so that the central longitudinal axis of the mold moves from an initial neutral position in which the central longitudinal axis of the mold is collinear with the axis of compression." This is the context in which the limitation "base" must be read and understood.

Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms. *See* Vitronics, 90 F.3d at 1582; *see also* ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed.Cir.2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms").

To begin with, the context in which a term is used in the asserted claim can be highly instructive.

Phillips, 415 F.3d at 1327.

From these provisions, it is clear that this invention requires the "base" to provide support to the second end of the mold from the bottom.

"Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313. Thus, a patent applicant may use the words in the specification, prosecution history, or both "in a manner inconsistent with its ordinary meaning." Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp., 320 F.3d 1339, 1347 (Fed .Cir.2003) (internal citations omitted). In other words, a patent applicant may consistently and clearly use a term in a manner either more or less expansive than its general usage in the relevant community, and thus expand or limit the scope of the term in the context of the patent claims. Ballard Med. Prods. v. Allegiance Healthcare Corp., 268 F.3d 1352, 1361 (Fed.Cir.2001) (noting that an applicant may disclaim claim scope during prosecution); Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed.Cir.2002) (explaining that in order to disavow claim scope, a patent applicant must clearly and unambiguously express surrender of subject matter during prosecution).

As used throughout the '655 patent, the limitation "base" would be understood by a person of ordinary skill in the art FN2 to mean "the foundation or bottom part of a structure which provides support." The ' 655 patent confirms this conclusion:

FN2. See, Academic Press Dictionary of Science and Technology (1992) defining "base" as "the lower part of a structure, especially one upon which an instrument rests" and Webster's 3rd New International Dictionary-Unabridged (C) 1993 defining "base" as "the bottom of something considered as its support: that on which something rests or stands...." Dictionaries "are often useful to assist in understanding the commonly understood meanings of words." Phillips, 415 F.3d at 1333.

The **base** assembly of the compacting apparatus is positioned to support the second end of the mold as the axial compressire [sic] force is applied to the material sample confined therein. Col. 2, ll. 54-57.
....

The **base** assembly 13 also preferably includes a support platen 60 which carries the turntable. Col. 8, ll. 1-2.

....

Furthermore, the **base** assembly 13 includes a turntable 53 and means for supporting the second end 15 of the mold 11 so as to permit relative movement of the turntable 53 therebeneath. Col. 7, ll. 48-51.

....

[T]he turntable 53 is preferably carried by the support platen 60 by means of a center hub 53b extending downwardly from the turntable 53 for receipt by a central indention in the support platen. Col. 8, ll. 20-23.

Read together, these portions of the specification teach that the base supports the second end of the mold, and includes a support platen and turntable. The turntable is beneath the second end of the mold and rotates the mold during the compaction process. The support platen carries the turntable through a central indention which receives the turntable's downwardly extending hub. This configuration cannot work if base is not on the bottom. A base located on the side or top of the apparatus would prevent the turntable from being located "beneath" the mold. It would also preclude the turntable from being affixed to the support platen by its "downwardly" extending center hub. These relationships are illustrated in the drawings. FIG. 1 depicts a front view of the apparatus with the base assembly located at the bottom. FIG. 2 is an enlarged detailed cross-sectional view of the compacting apparatus of FIG. 1. FIGs. 1 and 2 illustrate the invention as it is described in the Description of the Preferred Embodiments. Col. 7, ll. 48-51; Col. 8, ll. 20-23.
The '655patent further provides:

In operation, the mold 11 is loaded with a material sample 12 while in an initial neutral position. Col. 8, ll. 60-61.

....

Subsequently, the ram 20 is lowered into the first end 14 of the mold 11 so as to axially compress the confined material sample. Col. 8, ll. 67-68.

....

The ram 20 moves from an upper raised position illustrated in FIG. 1 to a lower position illustrated in FIG. 2 during the compaction of the material sample. Col. 5, ll. 15-17.

This confirms that base must be located on the bottom. The first open end of the mold is opposite the end supported by the base, the second end of the mold. The first open end receives the ram, which is lowered into the first open end from its raised position to provide the compressive force to the sample. If base were not on the bottom, the ram could not be "lowered" from its "raised" position into the first open end of the mold. These relationships are illustrated in the drawings. FIG. 1 shows the ram in a raised position, while FIG. 2 depicts the ram in a lowered position. FIGs. 1 and 2 illustrate the invention as it is described in the Description of the Preferred Embodiments. Col. 5, ll. 15-17; Col. 8, ll. 67-68. Additionally, FIG. 5 illustrates a rotating mold and base. It depicts a base located on the bottom. The drawings illustrate three separate embodiments of the invention. In each of these embodiments, the base is shown on the bottom. From a review of the claims and specification, it is clear that the patentee did not set out a novel definition of "base" with "reasonable clarity, deliberateness, and precision," and thus failed to act as its own lexicographer. *In re Paulsen,* 30 F.3d at 1480.

Moreover, in the Background of the Invention, the patentee criticized the prior art because the gyrating mechanism was located above the mold:

The position of the gyratory mechanism above the mold may increase the difficulty of loading and unloading of the specimen and the mold. In addition, safety procedures must be rigidly adhered to by the operator to ensure that all personnel are clear of the mold and gyratory mechanism prior to commencing compaction. Col. 1, ll. 62-68.

While this criticism of the prior art is not dispositive of whether the base must be located at the bottom of the apparatus, it is a factor the Court considers. *See* SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1345 (Fed.Cir.2001) ("SciMed patents distinguish the prior art.... That discussion in the written description supports the district court's conclusion that the claims should not be read so broadly as to encompass the distinguished prior art structure."); Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed.Cir.1997) ("Since, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection."). Distinguishing the '655 patent from the prior art, which positioned the gyratory mechanism above the mold, provides further confirmation that the limitation "base" is used in accordance with its common meaning.

The Federal Circuit has "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed.Cir.2002). However, as the Federal Circuit made clear in Scimed, 242 F.3d at 1344, the written description "can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format." *Id*. Thus, when a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term "by implication." Vitronics, 90 F.3d at 1582; *see also* Hockerson-Halberstadt, Inc. v. Avia Group Intern., Inc., 222 F.3d 951 (Fed.Cir.2000). Though "[j]ust as claims may not be limited to preferred embodiments, claims may not be broadened beyond the scope supported by the specification." Innovad, Inc. v. Microsoft Corporation, 99 F.Supp.2d 767, 772 (N.D. Texas 2000) (internal citations omitted).

In this case, the Claims describe an apparatus whose base is at the bottom. This is not an instance of limiting the claims to a "preferred embodiment" of an invention that has been more broadly disclosed. No such broader invention is described. The invention is described throughout the specification as it is claimed, with the base on the bottom and the Court is satisfied that a person of ordinary skill in the art would understand the limitation "base," as used in the '655 patent, as such.

In addition to consulting the patent itself, the Federal Circuit has held that a court "should also consider the patent's prosecution history, if it is in evidence." Markman, 52 F.3d at 980. "Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent." Phillips, 415 F.3d at 1317. To bolster the argument that "base" means "bottom," Pine directs the Court to the statement of the examiner: "The limitation 'base including means for moving ... of said mold' in Claim 1 and similar limitations in Claim 18, 34, and 41 are not shown or made obvious by the prior art." **[DE-101 at 46.]** Pine argues that this refers to the '655 patent's positioning of the mold resting on a base being loaded from the top. As Troxler notes, the examiner gave no reason for this statement and the Court will not infer one. Accordingly, this argument did not figure into this Court's reasoning.

For the reasons stated above, the Court recommends that the limitation "base" be construed to mean "the foundation or support structure located at the bottom of the apparatus."

B. Mold

The parties dispute the meaning of the limitation "mold." Troxler proposes to construe "mold" as "a body or mass having a cavity, a central longitudinal axis, and at least one open end adapted for receiving material sample to be compacted." **[DE-104 at 2.]** Pine proposes that "mold" be construed as "a hollow form for receiving, holding and shaping the material." **[DE-104 at 2.]**

The limitation "mold" would be understood by a person of ordinary skill in the art as "a body or mass with a hollow form for receiving, holding and shaping material." To determine whether the patentee deviated from the ordinary meaning and gave the term a novel or different meaning, the Court looks to the intrinsic record.

The limitation "mold" appears in Claims 1, 2, 3, 5, 11, 15, 17, 18, 19, 22, 28, 31, 34, 35, 37, 40, 41, 42, and is used consistently throughout these claims. The '655 patent provides:

That which is claimed:

1. A compactor apparatus comprising: a cylindrical **mold** having a central longitudinal axis and a first open end for receiving material to be compacted.... Claim 1, Col. 11, ll. 22-24.

....

34. An apparatus for compacting material comprising: a **mold** having a central longitudinal axis and a first open end for receiving material to be compacted.... Claim 34, Col. 14, ll. 35-38.

Troxler's proposed construction, "a body or mass having a cavity, a central longitudinal axis, and at least one open end ...," is belied by Claims 1 and 34 in which the terms "central longitudinal axis" and "first open end" are set out as additional characteristics of the mold. For example, if Troxler's proposed construction is applied to Claim 1, what results is a claim which reads "a body having a central longitudinal axis and a first open end, having a central longitudinal axis and a first open end...." As such, including "having a central longitudinal axis and a first open end" as part of the construction of "mold" is redundant. "A claim should not be construed in a manner that renders the claim language meaningless or superfluous.". Texas Instruments, Inc. v. United States International Trade Commission, 988 F.2d 1165, 1171(Fed.Cir.1993); Mosfet Technologies, L.L.C. v. Siemens AG, 378 F.3d 1396, 1410 (Fed.Cir.2004) (interpretations that render claim language superfluous are disfavored). Similarly, while various claims make it clear that the mold in the '655 patent has "a first open end" FN3 "a second end," FN4 and "two opposite ends," FN5 those features are not part of the meaning of mold. The limitation "mold," as used throughout the ' 655 patent, is used in accordance with its ordinary and customary meaning and requires only that it be hollow, and receive, hold, and shape the material sample.

FN3. *See* '655 patent, Claims 1, 34, 41.

FN4. *See* '655 patent. Claims 1, 3, 11, 18, 20, 28, 34, 35, 40, 41, 42.

FN5. *See* '655 patent, Claim 18.

The Court recommends that the proper construction for "mold" is "a body or mass with a hollow form for receiving, holding and shaping material having a cavity."

C. Second End of Said Mold

The parties dispute the meaning of the limitation "second end of said mold." Troxler argues that the proper construction for "second end of said mold" is "a limiting part or region of a mold distinct from the first end." **[DE-104 at 27.]** Pine argues the proper construction is "an extremity or termination of a mold, distinct from the first end, located at the extremity of the mold furthest from the first open end, i.e., the bottom of the mold." **[DE-104 at 27.]**

After reviewing the evidence and arguments, the Court is satisfied that the ordinary and customary meaning of the limitation "second end of said mold" would be understood by a person of ordinary skill in the art as "the outside or extreme edge of the mold, distinct from the first end of the mold." To detennine whether the patentee deviated from the ordinary meaning and gave the term a novel or different meaning, it is appropriate to consult the intrinsic record.

The limitation "second end of said mold" appears in Claims 1, 3, 11, 18, 20, 28, 34, 35, 40, 41, and 42, and is used consistently throughout the claims. Claim 1, which is representative, reads in pertinent part:

... and a base positioned to support a **second end of said mold** as the axial compressive force is applied thereto; said base including means for moving said **second end of the mold** so that the central longitudinal axis of the mold moves from an initial neutral position in which the central longitudinal axis of the mold is collinear with the axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly offset from the axis of compression and orbits thereabout at said **second end of said mold.**

The parties disagree on the meaning of "end." Pine argues that "end" simply refers to the extremity of an object. Troxler argues that the "end" of the mold connotes "a limiting part or region" and that "end" or "limiting part or region" should be construed to include an area beyond the "center point" of the mold or mold cavity to the outer edges. **[DE-99 at 10, 12.]** In its *Markman* hearing presentation, Troxler illustrated support for its proposed construction with the following example:

... another definition was 'the portion of an area or territory that lies at or by the termination, and that often serves as a limitation or boundary'. I thought that this example was particularly interesting. 'A section of a city not within the center portion.' So you would have one end of the city or another end of the city.

[Markman Transcript p 27 In 11-17**.]** To accept Troxler's argument that "end" encompasses any point beyond the center would require the Court to find that the patentee acted as its own lexicographer and intended to give the term a novel meaning. A careful review of the '655 patent fails to disclose such an intent and "where the inventor does not clearly explain the adoption of an uncommon or new definition for a claim limitation, the common meaning ... controls." Loral Fairchild Corp. v. Victory Co., 906 F.Supp. 798, 803 (E.D.N.Y.1995). Looking to the ordinary and customary meaning of the term as it is used in the '655 patent, the Court construes "end" to mean "outside or extreme edge."

The parties also disagree on whether the use of the word "second" in the claim term implicates a position. "It is common in patent drafting to use the terms 'first' and 'second' to distinguish between repeated instances of an element." 3M Innovative Properties Co. V. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed.Cir.2003). The use of the terms "first" and "second" does not in and of itself impose a serial or temporal limitation. However, while the use of the word "second" does not dictate that "second end of said mold" must be located on the bottom of the apparatus, the relationship between the second end of the mold and the base compels this result. In light of the Court's construction of "base" as "the foundation or support

structure located at the bottom of the apparatus" FN6 and the language of Claim 1, which provides "a base positioned to support a second end of said mold as the axial compressive force is applied thereto," it is clear that the "second end of said mold" is located on the bottom. Claim 18, which provides "a base positioned to support a second end of said mold," and Claim 34, which provides "a turntable carrying a second end of said mold" also confirm this result.

FN6. s. I(A), *supra*.

The remainder of the specification provides further support for the conclusion that "second end of said mold" is located on the bottom of the apparatus. FIGs. 1 and 2 illustrate an apparatus with the base on the bottom, and the second end of the mold resting on it. The Summary of the Invention provides that "the base assembly of the compacting apparatus is positioned to support the second end of the mold as the as the axial compressive force is applied to the material sample confined therein." Col. 2, ll. 54-57. This provision, when read in the context of the entire '655 patent, confirms that the base assembly provides support for the second end of the mold because the second end rests upon it. Based on a thorough review of the intrinsic record, FN7 the Court finds that the patentee acted as his own lexicographer with respect to the limitation "second end of the mold."

FN7. Additionally, the Description of the Preferred Embodiments reads, "a mold bottom puck 58 is received by the second end 15 of the mold 11 as illustrated in FIGS. 1 and 2." '655 patent, Col. 7, ll. 28-29. The patentee chose to describe the puck received by the second end of the mold as the "mold bottom puck," which makes clear that the second end of the mold must also be on the bottom so that it may receive the mold bottom puck.

The Court recommends that the limitation "second end of the mold" be construed as "the outside or extreme edge of a mold, distinct from the first end of the mold, located at the bottom of the mold."

D. First Open End of the Mold

The parties dispute the meaning of the limitation "first open end of the mold." Troxler's proposed construction of "first open end of the mold" is "a limiting part or region of a mold, distinct from the second end of the mold, that is accessible and nearer to the compressive force." **[DE-104 at 5.]** Pine proposes that "first open end of the mold" be construed as "an unobstructed orifice providing access to the mold, located at the top of the mold ." **[DE-104 at 5.]**

After reviewing the evidence and arguments, the Court is satisfied that the ordinary and customary meaning of the limitation "first end of said mold" would be understood by a person of ordinary skill in the art as "the outside or extreme edge of the mold, distinct from the second end of the mold."

The limitation "first open end of the mold" appears in Claims 1, 34, and 41. It is used consistently throughout these claims. Claim 1, which is representative, provides in pertinent part:

... a cylindrical mold having a central longitudinal axis and a first open end for receiving material to be compacted; ... a ram mounted for movement into the **first open end of said mold** for applying a compressive force to the material in the mold.

The parties dispute the meaning of the term "end." There is no indication that the patentee used the term "end" differently in this claim than in the limitation "second end of said mold." "Furthermore, a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir.2001); Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1465 (Fed.Cir.1998) ("A word or phrase used consistently throughout a claim should be interpreted consistently."). Accordingly, the Court incorporates its previous construction of "end," the "outside or extreme edge." FN8

FN8. s. I(C), *supra*.

The parties also dispute whether "first" in the claim limitation "first open end of the mold" connotes a position. As discussed in s. I(C), *supra,* there is nothing inherent in the terms "first" and "second" that dictates position. *See also* 3M Innovative Properties Co., 350 F.3d at 1371. Instead, the position of the "first end of the mold" is dictated by the Court's construction of "second end of said mold" and the plain language of the '655 patent. Because the second end of the mold rests on the base, which is on the bottom, the first end must necessarily be the top.

Further support for this construction is found in the specification. For example, the Description of Preferred Embodiments provides:

the ram 20 is lowered into the **first end 14 of the mold** 11 so as to axially compress the confined material sample. Col. 8, ll. 67-68.

The Abstract provides:

An apparatus and method for compacting a material sample, such as soil or paving material, including a mold for receiving the material sample and a ram mounted for movement into a **first open end of the mold** to provide an axial compressire [sic] force thereto.

In order for the invention to perform as described, the first open end must be located at the top of the mold so that it may receive the material sample and the compaction ram as it is "lowered ... to axially compress" the sample. The patentee has chosen to act as his own lexicographer and has given "first open end of the mold" a special meaning in the context of the '655 patent.

The Court recommends the proper construction for "first open end of the mold" is "outside or extreme edge of the mold, located at the top, distinct from the second end of the mold, which provides access to the mold."

E. First Open End for Receiving Material to be Compacted

Troxler argues there is no need for the Court to construe "first open end for receiving material to be compacted" separately from the limitation "first open end of the mold." **[DE-104 at 15.]** Pine proposes to construe "first open end for receiving material to be compacted" as "an unobstructed orifice located at the top of the mold through which material to be compacted is delivered into the mold." **[DE-104 at 15.]**

The limitation "first open end for receiving material to be compacted" appears in Claims 1 and 34. The limitation is used identically in both claims. Claim 1 provides in pertinent part:

a compactor apparatus comprising: a cylindrical mold having a central longitudinal axis and a **first open end for receiving material to be compacted;** a ram mounted for movement into the first open end of said mold for applying a compressire [sic] force to the material in the mold.

The Court construed the limitation "first open end of the mold" as the "outside or extreme edge of the mold, located at the top, distinct from the second end of the mold, which provides access to the mold." FN9 "[F]irst open end for receiving material to be compacted" refers to the same structure in the apparatus as "first open end of the mold". *See* Col. 4, ll. 68-Col. 5, ll. 1 ("The mold ... has at least one open end 14 for receiving the material sample 12 to be compacted.").

FN9. s. I(D), *supra*.

Therefore, the Court recommends that the limitation "first open end for receiving material to be compacted" not be construed further because its meaning is clear in light of the Court's previous construction of "first open end of the mold."

F. Placing the Material in a First Open End of the Mold

Troxler argues that there is no need for the Court to construe "placing the material in a first open end of the mold" and that doing so would be duplicative of previously construed limitations. **[DE-104 at 24.]** Pine disagrees and proposes the following construction: "to put material into the mold through the first open end of the mold, located at the top of the mold." **[DE-104 at 24.]**

The limitation "placing the material in a first open end of the mold" appears in Claim 41, which provides in pertinent part:

a method for compacting a material comprising the steps of: **placing the material in a first open end of a mold,** said mold having a central longitudinal axis therethrough ...

The Court previously construed the limitation "first open end of the mold" to mean "outside or extreme edge of the mold, located at the top, distinct from the second end of the mold, which provides access to the mold." FN10 There is no indication that the term is used differently in this claim limitation. "Furthermore, a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent ." Rexnord Corp., 274 F.3d at 1342. Accordingly, the Court incorporates its construction of "first open end of the mold" into this claim limitation. The limitation "placing" has an ordinary meaning that is consistent with its use in the claim. It means "to put into."

FN10. s. I(D), *supra*.

For the reasons stated above, the Court recommends that the limitation "placing the material in a first open end of the mold" not be construed further.

G. Support

The parties dispute the meaning of the claim limitation "support ." Troxler's proposed construction is "to bear the weight and stress of or to keep from failing or yielding during stress." **[DE-104 at 55.]** Pine proposes the construction "to hold up or maintain in position." **[DE-104 at 55.]** The key disagreement concerns whether support must originate from underneath, or whether support can originate from any orientation.

The ordinary and customary meaning of the limitation "support" would be understood by a person of ordinary skill in the art as "to maintain in position or to bear the weight of." To determine whether the patentee deviated from the ordinary meaning and gave the term a novel or different meaning, it is appropriate to consult the intrinsic record.

This limitation appears in Claims 1, 11, 18, 28, 40, 41, and 42. Claim 1, which is representative, reads in pertinent part:

... and a base positioned to **support** a second end of said mold as the axial compressive force is applied thereto ...

There is no express definition for "support" found in either the specification or the prosecution history and no indication that the patentee intended to give the term a novel meaning. Because this is not a case in which the patentee has acted as its own lexicographer, the ordinary and customary meaning applies.

Accordingly, the Court recommends that "support" be construed to mean "to maintain in position or to bear the weight of."

H. Base Positioned to Support a Second End of Said Mold

The parties dispute the meaning of "base positioned to support a second end of said mold." Troxler argues that once the Court construes the limitations "base," "support," and "second end of said mold," it would be duplicative to construe the limitation "base positioned to support a second end of said mold." **[DE-104 at 51.]** Pine, proposes that the limitation be construed to mean "the foundation or support structure located at the bottom of the apparatus placed to support the bottom of the mold." **[DE-104 at 51.]**

"Base Positioned to Support a Second End of Said Mold" appears in Claims 1 and 18 and is used consistently in both claims. Claim 1 reads in pertinent part:

A compactor apparatus comprising: ... **a base positioned to support a second end of said mold** as the axial compressire [sic] force is applied thereto; said base including means for moving said second end of the mold so that the central longitudinal axis of the mold moves from an initial neutral position in which the central longitudinal axis of the mold is collinear with the axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly offset from the axis of compression and orbits thereabout at said second end of said mold.

In s. I(A), *supra,* the Court construed the limitation "base" as "the foundation or support structure located at the bottom of the apparatus." In s. I(G), *supra,* the Court construed the limitation "support" as "to maintain in position or to bear the weight of." In s. I(C), *supra,* the Court construed the limitation "second end of the mold" as "the outside or extreme edge of a mold, distinct from the first end of the mold, located on the

bottom of the mold." There is no indication that the limitations "base," "support," or "second end of said mold" have a different meaning in this claim. As such, the Court will construe these limitations consistent "with [their] appearance in other places in the same claim or in other claims of the same patent ." Rexnord Corp., 274 F.3d at 1342. The Court incorporates the construction of the limitations "base," "support," and "second end of said mold" into the limitation "base positioned to support a second end of said mold."

Thus, the only term remaining for the Court to construe is "positioned." The claim limitation "positioned" has an ordinary meaning that is consistent with its use in the Claims. It means "to put in or place in the proper position." Claims 1 and 18 make clear that base moves the second end of the mold "from a neutral initial position ... to a tilted, operative position." Col. 2, ll. 60-64. Once in the tilted operative position, "[t]he base is thereinafter rotated relative to the mold so as to revolve the center of the second end of the mold about the axis of compression, thus, gyrating the axially compressed material sample." Abstract, '655 patent. The base moves with the second end of the mold so that it remains positioned throughout the gyration and compaction process to provide support to the second end of the mold.

The Court recommends that "base positioned to support a second end of said mold" be construed as "base put in the proper position to support the second end of the mold."

I. Support Platen

The parties dispute the meaning of the limitation "support platen." Troxler argues that the proper construction of "support platen" is "a plate that exerts or receives pressure." **[DE-104 at 70.]** Pine argues that the proper construction is "a plate-like component of an apparatus having a flat upper surface that bears weight or transmits pressure." **[DE-104 at 70.]** The central dispute between the parties is whether the support platen has a positional requirement, that is whether the platen provides support by its upper surface.

The ordinary and customary meaning of the limitation "support platen" would be understood by a person of ordinary skill in the art as "a flat plate that bears weight or transmits pressure." To determine whether the patentee deviated from the ordinary meaning and gave the term a novel or different meaning, the Court consults the intrinsic record.

The limitation "support platen" appears in Claims 2, 3, 4, 5, 8, 9, 10, 12, 19, 20, 21, 22, 25, 26, 27, 34, 35, 36, 37, and 39 and is used consistently throughout these claims. Claim 2, which is representative, provides in pertinent part:

... wherein said base additionally includes a **support platen** and a turntable carried by said **support platen,** said compactor apparatus also including means for mounting said turntable to said **support platen** for rotation of the turntable, relative to the **support platen,** through a limited arc ...

The Claims teach that the support platen is a part of the base. Because this Court has construed the limitation "base" to mean "the foundation or support structure located at the bottom of the apparatus," the support platen must also be located at the bottom of the apparatus. Further support for this conclusion is found in the remainder of the '655 patent, which provides:

The base assembly 13 also preferably includes a **support platen** 60 which carries the turntable. Col. 8, ll. 1-2.

....

Furthermore, the base assembly 13 includes a turntable 53 and means for supporting the second end 15 of the mold 11 so as to permit relative movement of the turntable 53 therebeneath. Col. 7, ll. 48-51.

....

[T]he turntable 53 is preferably carried by the **support platen** 60 by means of a center hub *53b* extending downwardly from the turntable 53 for receipt by a central indention in the support platen. Col. 8, ll. 20-23.

Read together, these portions make clear that the support platen is the part of the base assembly that carries the turntable. Moreover, the turntable is attached to the support platen by "a center hub extending downwardly." The turntable could not be carried by the support platen or affixed by a downwardly extending hub if the support platen were located anywhere but beneath the turntable. These provisions also make clear that it is the upper surface of the support platen which provides the support.

Accordingly, the Court recommends that "support platen" be construed to mean "a flat plate whose upper surface bears weight or transmits pressure."

J. Turntable

The parties dispute the meaning of the limitation "turntable." Troxler's proposed construction of "turntable" is "a rotating or revolving platform or disk." **[DE-104 at 62.]** Pine proposes to construe "turntable" as "a circular platform which rotates about a center pivot." **[DE-104 at 62.]** The central dispute is whether a turntable necessarily requires rotation about a center pivot. **[DE-101 at 61, 62.]**

The ordinary and customary meaning of the limitation "turntable" would be understood by a person of ordinary skill in the art as "a circular platform rotating on a center pivot." Whether the patentee deviated from this meaning and gave the term a novel or different meaning must be resolved by resort to the intrinsic record.

This limitation appears in Claims 2, 3, 4, 11, 19, 20, 21, 27, 28, 34, 35, 36, 39, and 40 and is used consistently throughout these claims. Claim 2 which is representative, reads in pertinent part:

... wherein said base additionally includes a support platen and a **turntable** carried by said support platen, said compactor apparatus also including means for mounting said **turntable** to said support platen for rotation of the **turntable,** relative to the support platen ...

The specification confirms that the term is used in accordance with its ordinary and customary meaning. Specifically, the '655 patent provides:

During rotation through the limited arc, the **turntable** rotates about a **predetermined axis** of rotation. Col. 3, ll. 21-22.

....

[A] plurality of bearings 64 define the **predetermined axis** of rotation 53a of the **turntable** .... Col. 8, ll.

12-13.

....

The turntable 53 is preferably carried by the support platen 60 by means of a center hub *53b* extending downwardly from the **turntable** 53 for receipt by a central indention in the support platen 60. The plurality of bearings 64, preferably tapered bearings, are positioned about the periphery of the center hub *53b* of the **turntable** 53. The bearings 64 are positioned within a race defined by the opposing sidewalls of the center hub *53b* of the **turntable** 53 and the center indention of the support platen 60. Col. 8, ll. 20-29.

Read together, these portions of the specification make clear that the turntable has a center pivot from which it rotates. The bearings define the axis of rotation and are located in a race around the center hub of the turntable, therefore, the predetermined axis must also be the center hub of the turntable.

Accordingly, the Court recommends that "turntable" be construed to mean "a circular platform rotating on a center pivot."

K. Turntable Carrying a Second End of Said Mold

The parties dispute the meaning of the term "turntable carrying a second end of said mold." Troxler objects to a construction of this limitation, arguing that it would be duplicative for the Court to construe this limitation separate from the previously construed limitations "turntable" and "second end of said mold." **[DE-104 at 68.]** Pine argues that "turntable carrying a second end of said mold" should be construed to mean "a circular platform which rotates about a center pivot and holds up or maintains in position the bottom of the mold." **[DE-104 at 68.]**

"Turntable carrying a second end of said mold" appears in Claim 34, which reads in pertinent part:

... a **turntable carrying a second end of said mold;** and a support platen carrying said turntable ...

The Court has previously construed "turntable" as "a circular platform which rotates about a center pivot" and "second end of said mold" as "the outside or extreme edge of a mold, distinct from the first end of the mold, located on the bottom of the mold." There is no indication that the limitations "turntable" or "second end of said mold" have a different meaning in this claim. Moreover, a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent. Rexnord Corp., 274 F.3d at 1342. Accordingly, the Court incorporates the construction of those limitations into the limitation "turntable carrying a second end of said mold." The addition of the word "carrying" does nothing to alter the construction of either limitation. Moreover, "carrying" is commonly understood to mean "to support the weight of."

The claim limitation is clear and the Court recommends that this limitation not be construed separately from previously construed claim limitations.

L. Means for Moving

The parties agree that the "means for moving" element in Claims 1 and 18 is a means plus function element governed by s. 112 para. 6, and that the function to be performed is "moving said second end of said mold." The parties disagree as to the corresponding structure which is disclosed in the patent. Troxler argues that

the corresponding structure "includes the turntable, support platen, slot and projection." **[DE-104 at 75.]** Pine contends that the patent contains no corresponding structure or, alternatively, that the corresponding structure is set forth in the patent specification for the claim term "means for mounting." **[DE-104 at 75.]**

The element "means for moving" appears twice in the claims, in Claim 1 and Claim 18. Claim 1 provides, in pertinent part:

... said base including **means for moving** said second end of the mold so that the central longitudinal axis of the mold moves from an initial neutral position in which the central longitudinal axis of the mold is collinear with the axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly offset from the axis of compression and orbits thereabout at said second end of said mold.

Claim 18 provides, in pertinent part:

said base including **means for moving** said second end of said mold so that the central longitudinal axis of the mold moves from an initial neutral position in which the central longitudinal axis of the mold is collinear with the axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly displaced from the axis of compression and orbits thereabout at said second end of said mold.

The Court agrees with the parties that the the function performed by "means for moving" is "moving said second end of said mold."

After identifying the function of "means for moving," the Court must "look to the specification and identify the corresponding structure for that function. Under this second step, structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." Medical Instrumentation and Diagnostics Corp., 344 F.3d at 1210 (internal citations omitted). The remainder of the specification provides, in pertinent part:

Furthermore, the base assembly 13 preferably includes means for mounting the turntable 53 to the support platen 60. The means for mounting allows rotation of the turntable 53 through a limited arc so as to move the second end 15 of the mold 11 from the initial neutral position to the tilted operative position. Col. 8, ll. 2-8.

....

In order to tilt the mold, the support platen 60 is rotated by the drive 68. During the initial rotation of the support platen 60 about the axis of gyratory rotation 70a, the turntable 53 remains substantially rotationally stationary relative to the axis of gyratory rotation 70a as the arcuate slot 75 moves relative to the projection 74.... This movement of the turntable 53 about the predetermined axis of rotation 53a relative to the support platen 60 and the movement of the arcuate slot 75 relative to the projection 74 gradually laterally shifts the center of the mold bottom puck 58a and therefore the second end 15 of the mold 11 relative to the axis of compression 20a. Col. 9, ll. 23-38.

[DE-104 at 77.] Though these passages actually refer to "means for mounting," and not "means for moving," they serve to identify the structure that performs the function of "moving said second end of said

mold." *See* Medtronic, Inc. v. Advanced Cardiovascular Systems, Inc., 248 F.3d 1303 (Fed.Cir.2001) (the Court notes as a "truism" that a single structure may perform multiple functions). From these portions of the specification, it is clear that the turntable, support platen, and drive are corresponding structure.

Troxler argues that the arcuate slot and projection are also corresponding structure. However, the arcuate slot is a feature of the support platen and not corresponding structure. Col. 9, ll. 47-48 ("the axis of compression 20a is defined by the length of the arcuate slot 75 in the support platen 60...."). The projection's purpose is to adjust the circumferential length of the arcuate slot, which affects the movement of the second end of the mold but is not necessary to accomplish said movement. Col. 3, ll. 48-49 ("... a projection extending therefrom for adjusting the circumferential length of the arcuate slot.).

The Court finds that the structure identified in the specification as corresponding to the function of "moving said second end of said mold" is the turntable, support platen, and drive.

M. Means for Mounting

The parties agree that the "means for mounting," which appears in Claims 2 and 19, is a means plus function element. The parties disagree as to the function to be performed. Troxler contends that the function to be performed is "mounting said turntable to said support platen for rotation of the turntable relative to the support platen." Pine contends that the function is "mounting said turntable to said support platen for rotation of the turntable, relative to the support platen, through a limited arc about an axis of rotation parallel with and displaced from the axis of compression ."

The element "means for mounting" appears in Claims 2 and 19, which provide respectively:

The compactor apparatus according to claim 1 wherein said base additionally includes a support platen and a turntable carried by said support platen, said compactor apparatus also including **means for mounting** said turntable to said support platen for rotation of the turntable, relative to the support platen, through a limited arc about an axis of rotation parallel with and displaced from the axis of compression so as to move said mold from an initial neutral position in which the central longitudinal axis of the mold is collinear with said axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly offset from said axis of compression.

....

The apparatus for compacting material according to claim 18 wherein said base additionally includes a support platen and a turntable carried by said support platen, said apparatus for compacting material also including **means for mounting** said turntable to said support platen for rotation of the turntable, relative to the support platen, through a limited arc about an axis of rotation parallel with and displaced from the axis of compression so as to move said mold from an initial neutral position in which the central longitudinal axis of the mold is collinear with said axis of compression to a tilted operative position in which the central longitudinal axis of the mold is angularly offset from said axis of compression.

The element "means for mounting" also appears five times in the remainder of the specification:

The support platen preferably includes **means for mounting** the turntable to the support platen for rotation of the support platen through a limited arc relative to the turntable.... Col. 3, ll. 12-14.

....

Furthermore, the base assembly 13 preferably includes **means for mounting** the turntable 53 to the support platen 60. The **means for mounting** allows rotation of the turntable 53 through a limited arc so as to move the second end 15 of the mold 11 from the initial neutral position to the tilted operative position. The **mounting means** preferably includes a threaded stud 61 inserted from an aperture defined in the support platen 60 to the turntable 53 for permitting rotation thereabout. Col. 8, ll. 2-11.

....

The tilting of the mold 11 is provided by the **means for mounting** the turntable 53 to the support platen 60 which allows the turntable 53 to rotate.... Col. 9, ll. 7-9.

"Mount" would be understood by a person of ordinary skill in the art to mean "to attach to a support or assemble for use." However, in this case, the patentee indicated an intent to deviate from the ordinary and accustomed meaning of "mount." Hoechst Celanes Corp., 78 F.3d at 1578 (a patentee may give a term a special definition where that definition is clearly stated in the specification). The specification discloses that the "means for mounting" serves not only to attach or mount the turntable to the support platen; the "means for mounting" also provides for the tilting of the mold.

Pine's addition of "through a limited arc about an axis of rotation parallel with and displaced from the axis of compression" describes the purpose for which the turntable is mounted to the support platen. Therefore, the Court determines that the function corresponding to the claim term "means for mounting" is "mounting said turntable to said support platen for rotation of the turntable relative to the support platen" and providing "the tilting of the mold."

The parties differ as to what structure is required to accomplish these functions. Troxler argues that the corresponding structure includes a stud. **[DE-104 at 83.]** Pine argues that corresponding structure is:

[A] threaded stud 61 inserted from an aperture defined in the support platen 60 to the turntable 53 and a plurality of bearings 64 for permitting rotation thereabout combined with: (a) a projection 74, such as a dowel rod, outwardly extending from the turntable 53 in an arcuate slot 75 defined by the support platen 60 for receiving the outwardly extending projection 74 of the turntable 53; combined with (a) an adjustable stop 76 positioned at one end of the slot or (b) adjustable stops 76 positioned at both ends of the arcuate slot 75; or (c) the positioning of a plurality of adjustable stops 76 and 76:, such as threaded rods, along the arcuate slot 75 so as to be inserted in the arcuate slot; or (d) an annular plate 80 that overlies the support platen 60 with a projection 81 extending over the arcuate slot 75 so as to engage the outwardly extending projection 74 of the turntable 53 and form the second end 75B of the elongated arcuate slot 75. The annular plate 80 also includes a positioning means for selectively locating the projection 81 relative to the arcuate slot 75 of the support platen 60. The periphery of the annular plate 80 forms a worm gear which includes a plurality of spaced apart teeth 82 and the positioning means includes a threaded rod 83 whose raised threads 84 intersect and mesh with the plurality of teeth 82 of the annular plate 80. Thus, by rotating the threaded rod 83 of the positioning means, the annular plate 80 may be rotated relative to the support platen 60 so as to selectively adjust the circumferential length of the arcuate slot 76 therein."

[DE-104 at 83-85.]

Though both positions find support in the text of the '655 patent, one goes too far and the other not far enough. Contrary to Troxler's argument, a stud alone will not accomplish the function performed by this means. The specification provides:

Furthermore, the base assembly 13 preferably includes means for mounting the turntable 53 to the support platen 60. The **means for mounting** allows rotation of the turntable 53 through a limited arc so as to move the second end 15 of the mold 11 from the initial neutral position to the tilted operative position. The **mounting** means preferably includes a threaded stud 61 inserted from an aperture defined in the support platen 60 to the turntable 53 for permitting rotation thereabout. Col. 8, ll. 2-11.

....

In order to tilt the mold, the support platen 60 is rotated by the drive 68. Col. 9, ll. 21-22.

These provisions clearly identify the structure corresponding to "means for mounting" as a threaded stud, support platen, turntable, and drive.

Pine's lengthier list consists essentially of the following: threaded stud, support platen, turntable, bearings, a projection, arcuate slot, aperture, adjustable stop, annular plate, spaced apart teeth, and threaded rod with raised threads. A careful reading of the specification indicates that the only purpose for the "plurality of bearings" is to "define the predetermined axis of rotation of the turntable...." Col. 8, ll. 12. The aperture and the arcuate slot are features of the support platen and not corresponding structure. Col. 8, ll. 8-11 ("The mounting means preferably includes a threaded stud 61 inserted from an aperture defined in the support platen 60 to the turntable 53 for permitting rotation thereabout."); Col. 9, ll. 47-48 ("the axis of compression 20a is defined by the length of the arcuate slot 75 in the support platen 60....").

Pine also argues that the adjustable stop, the projection, and the annular plate are corresponding structure. The purpose of the adjustable stop is "to select the circumferential length of the arcuate slot." Col. 3, ll. 42-43. The same is true of the projection. Like the adjustable stop, its purpose is to adjust the circumferential length of the arcuate slot. Col. 3, ll. 48-49. The annular plate is also associated with adjusting the circumferential length of the arcuate slot. Col. 3, ll. 46-50.

Pine further asserts that a threaded rod is corresponding structure for "means for mounting." The patentee used the term "threaded rod" as an example of an adjustable stop. "The amount by which an adjustable stop, such as a threaded rod, may enter the arcuate slot 75 and thus limit its circumferential length is limited ..." Col. 10, ll. 1-3. The adjustable stop is not corresponding structure; it acts to set the length of the arcuate slot. Thus, the threaded rod does not accomplish the function of "mounting said turntable to said support platen for rotation of the turntable relative to the support platen" nor does it provide for the tilting of the mold.

Pine also argues that spaced apart teeth are corresponding structure. "Most preferably, the periphery of the annular plate 80 forms a worm gear which includes a plurality of spaced apart teeth 82 and the positioning means includes a threaded rod 83 whose raided threads 84 intersect and mesh with the plurality of teeth 82 of the annular plate 80." Col. 10, ll. 28-33. However, the function that the interaction of the spaced apart teeth and the threaded rod accomplish is not the function corresponding to "means for mounting ." Instead, it is to "selectively adjust the circumferential length of the arcuate slot." Accordingly, the spaced apart teeth are not necessary to accomplish the "means for mounting" and are not corresponding structure. Because the

bearings, aperture, arcuate slot, adjustable slot, projection, annular plate, threaded rod, and spaced apart teeth are not necessary to mount the turntable to the support platen for rotation of the turntable relative to the support platen, they are not corresponding structure. *See* Frank's Casing Crew & Rental Tools, Inc., 389 F.3d 1370, 1377 (Fed.Cir.2004) (citing Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1322 (Fed.Cir.2003) (Corresponding structure "must be necessary to perform the claimed function.")).

The Court finds that the structure identified in the specification as corresponding to the function of "mounting said turntable to said support platen for rotation of the turntable relative to the support platen" and "tilting the mold" is a threaded stud, the support platen, the turntable, and the drive.

N. Means for Rotating

The parties agree that the "means for rotating" element in Claims 3, 20 and 35 is a means plus function element. The parties are also in basic agreement on the function it performs: "rotating both said support platen and said turntable about an axis of gyratory rotation following said rotation of said turntable through said limited arc." **[DE-104 at 96.]** To this agreed upon function, Pine adds, "said axis of gyratory rotation being collinear with said axis of compression." *Id*. The parties disagree as to the corresponding structure which is disclosed in the patent. Troxler contends that the corresponding structure includes a projection. *Id*. Pine contends that the patent fails to disclose structure corresponding to this function. However, in an alternate argument, Pine contends that corresponding structure may be a sprocket and chain connected to the base assembly, and a drive. *Id*.

The element "means for rotating" appears in Claims 3, 20, and 35. Claim 3, which is representative, provides in pertinent part:

The compactor apparatus according to claim 2 wherein said base additionally includes **means for rotating** both said support platen and said turntable about an axis of gyratory rotation following said rotation of said turntable through said limited arc, said axis of gyratory rotation being collinear with said axis of compression such that rotation thereabout revolves said second end of said mold about said axis of compression.

The Court finds that the function to be performed is "rotating both said support platen and said turntable about an axis of gyratory rotation following said rotation of said turntable through said limited arc." Next, the Court must "look to the specification and identify the corresponding structure for that function. Under this second step, structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." Medical Instrumentation and Diagnostics Corp., 344 F.3d at 1210 (internal citations omitted). The specification further provides, in pertinent part:

The base assembly of the compacting apparatus also preferably includes a turntable and a support platen adapted to carry the turntable and to allow for rotational movement therewith. Col. 3, ll. 5-8.

....

This limited initial rotation by the turntable 53 is preferably provided by the combination of a projection 74, such as a dowel rod, outwardly extending from the turntable 53 in an arcuate slot 75 defined by the support platen 60 for receiving the outwardly extending projection 74 of the turntable 53. Col. 9, ll. 13-18.

....

Further rotation of the support platen 60 by the drive 68 also rotates the turntable 53 due to the engagement of the outwardly extending projection 74 of the turntable 53 with the second end 75 b of the arcuate slot 75. Col. 10, ll. 46-49.

These provisions clearly link the support platen, turntable, projection, and drive with the function "rotating both said support platen and said turntable about an axis of gyratory rotation following said rotation of said turntable through said limited arc."

The Court rejects Pine's alternative argument, that "a sprocket and chain connected to the base assembly, and a drive" are corresponding structure. The specification provides:

Most preferably, the drive means includes a sprocket 66 axially aligned with and having a first face affixed to a lower face 53a of the support platen 60. As shown in FIG. 3, the sprocket 66 has a number of teeth circumferentially spaced about its periphery for receiving and meshing with a drive chain 67. The drive chain 67 is, in turn, operably connected to a suitable drive 68 for advancing the drive chain 67 so as to rotate the sprocket 66. Col. 8. ll. 34-38.

This provision makes clear that the sprocket and chain are linked to the function performed by "drive means." FN11 A thorough review of the ' 655 patent fails to disclose the sprocket and chain as corresponding structure with the function performed by this means.

FN11. s. (I)Q, infra

Accordingly, the Court finds that the structure identified in the specification as corresponding to the function "rotating both said support platen and said turntable about an axis of gyratory rotation following said rotation of said turntable through said limited arc" are the support platen, turntable, projection, and drive.

O. Compression Means

The parties agree that the "compression means" element in Claims 18 and 34 is a means plus function element but disagree as to the function it performs. Troxler contends that the function is "compressing the material specimen in the mold." Pine argues the function is "compressing the material in the mold by moving into the first open end of the mold applying compressive force to the material in the mold along an axis of compression to compact the material." **[DE-104 at 102.]** The language Pine would add describes how the compression is performed, not the function of the "compression means." The Court finds that the function corresponding to the claim term "compression means" is "compressing the material in the mold."

Troxler argues that the corresponding structure includes a ram, while Pine maintains that it includes "a ram 20 mounted for movement into the first open end 14 of the mold 11 ... carried by a frame 21 which restricts the ram to axial movement. The ram 20 moves from upper raised position illustrated in Fig. 1 to a lower position illustrated in Fig. 2 during the compaction of the material sample 12." **[DE-104 at 102.]** In essence, Pine proposes a ram, and the additions of the first open end of the mold, and the frame.

"Compression" would be understood by a person of ordinary skill in the art to mean "the quality or state of being compressed, pressed in, together, or upon or of being concentrated or condensed." Its use in Claim 18 and 34 is consistent with this ordinary meaning. The first end of the mold plays no role in the compression. This fact is borne out by the specification, which provides:

The **compression means** of the material sample compacting apparatus preferably includes a ram mounted for movement into a first open end of the mold for compacting the material by applying a compresslye (sic) force.... Col. 2, ll. 40-44.

....

The **compression means** is preferably a ram 20 mounted for movement into the open first end 14 of the mold 11.... Col. 5, ll. 9.

From these portions of the specification, it is clear that the ram accesses the sample to be compacted through the first open end of the mold. The words "mounted for movement" in the cited portion of the specification serve to distinguish corresponding structure from structure that is not necessary to accomplish the function to be performed.

Pine also argues that the frame is corresponding structure. However, this contention is not supported by the patent, which provides:

[T]he ram is ... operably mounted upon a frame such that it is constrained to axial movement. Col. 2, ll. 48.

Rather than indicating that the frame is necessary or corresponding structure, the passage simply indicates that the ram is "mounted upon a frame."

A thorough review of the specification confirms that the only structure corresponding to "compression means" is the ram. Specifically, the specification provides:

The compacting apparatus 10 also preferably includes a means for controlling the axial compressire (sic) force applied by the ram 20. Col. 7, ll. 12-14.

Based on the foregoing, the Court finds that the corresponding structure for "compression means" is a ram.

P. Means for Controlling

The parties agree that the "means for controlling" element in Claims 13, 14, 16, 29, 30, 32, and 33 is a means plus function element, but disagree as to the function it performs. Troxler argues that the function is "controlling the axial compressive force." Pine maintains that the function is "controlling the axial compressive force applied by said ram." The parties stipulated that "controlling" means "regulating or directing some operation." **[DE-36.]**

"Means for controlling" is used first in Claim 13, which provides:

The compactor apparatus according to claim 1 further comprising a **means for controlling** the axial compressive force applied by said ram.

Claim 1, upon which Claim 13 depends, provides:

A compactor apparatus comprising: ... a ram mounted for movement into the first open end of said mold for applying a compressire [sic] force to the material in the mold along an axis of compression to compact the material....

Therefore, in Claims 13, 14 and 16 which depend on Claim 1, the addition of "applied by said ram," as proposed by Pine, would be redundant. Vesture Corp. v. Thermal Solutions, Inc., 284 F.Supp.2d 290, 306 (M.D.N.C.2003) ("The court finds that inclusion of the remaining portion of Vesture's proposed definition would be redundant, as it is often repeated elsewhere throughout the claims."). The Court finds that the function corresponding to the claim term "means for controlling" is "controlling the axial compressive force."

Troxler argues that the corresponding structure includes drive motors, such as electric stepper motors, which may be controlled manually or by means of control circuitry and other hydraulic or mechanical assemblies. Pine argues that the corresponding structure is "a load cell 49 positioned collinearly with a jack screw 24a and the ram shaft 20 within the shaft collar 36, control circuitry and a drive motor." **[DE-104 at 107.]**

The Summary of the Invention identifies "a load cell" as corresponding structure:

... means for measuring the axial compressire (sic) force applied to the material sample and most preferably includes a load cell for measuring the axial compressire (sic) force. Col. 4, ll. 1-5.

The next sentence makes it clear that "control circuitry" as well as the "drive motor" are corresponding structure:

The measurement of the axial compressive force is preferably provided to control circuitry which, in turn, preferably provides signals to the drive motor the axial position of the ram and maintaining a substantially constant compressive force on the material sample. Col. 4, ll. 6-8.

Other portions of the patent confirm that "control circuitry" and "drive motor" are corresponding structure:

[T]he ram's axial movement along the frame is preferably electrically controlled by a drive motor 25, such as an electric stepper motor. The drive motor 25 may be controlled manually or by means of control circuitry 59 responsive to feedback signals.... Col. 5, ll. 19-23.

Neither the jack screw, ram shaft, nor the shaft collar are corresponding structure; they are not necessary to control the axial compressive force. The terms "ram" and "ram shaft" are identified in the specification by the same number, 20, and appear to be used interchangeably. Col. 5, ll. 13-14, 65. There is no indication in the specification that the ram shaft is separate or severable from the ram. The ram shaft collar "supports the mold locating ring 42 and the lower slide plate 33 while the ram is in a raised position," Col. 7, ll. 8-10, and is thus not necessary to control the axial compressive force.

The ball screw jack's involvement in controlling the position of the ram is set forth in the Description of the Preferred Embodiments:

The drive motor is electromechanically connected to a ball screw jack which, in turn, controls the axial position of the ram. Col. 5, ll. 27-29.

This provision leaves no doubt that the ball screw jack is corresponding structure. Further confirmation is found in the remainder of the specification, which provides:

[T]he drive motor 25 is electromechanically connected to a **ball screw jack** which, in turn, controls the axial position of the ram 20. The **ball screw jack** 22 includes a housing 24 in which a jack screw 24a is slidably positioned. Col. 5, ll. 27-31.

From this provision, it is clear that the jack screw is a component of the ball screw jack. Jack screw is mentioned three other times in the remainder of the specification, which provides:

The upper plate 30 is operably connected to the **jack screw** 24 a. As illustrated in FIG. 1, a shaft collar 36 may be affixed, such as by threaded fasteners 37, to an upper face 30a of the upper slide plate 30. The shaft collar 36 is, in turn, connected to the upper slide plate 30, such as by the threaded connection between an aperture defined in the shaft collar 36 and the **jack screw** 24a. Col. 5, ll. 55-61.

....

This controlling means preferably includes means for measuring the axial compressive force applied to the material sample 12, such as a load cell 49 as illustrated in FIG. 1. The load cell 49 is preferably positioned colinearly with the **jack screw** 24a and the ram shaft 20 within the shaft collar 36. Col. 7, ll. 14-18.

Each reference to the jack screw sets forth its location, not its purpose. As such, none of these references clearly associate it with the function "controlling the axial compressive force."

Accordingly, the Court finds that the corresponding structure associated with "means for controlling" is the drive motor, ball screw jack, load cell, and control circuitry.

Q. Drive Means

The parties agree that the "drive means" element, which appears in Claims 12, 27, and 39, is a means plus function element and are in basic agreement on the function it performs: FN12 "driving rotation of the support platen and turntable." **[DE-104 at 112.]** To this Pine now wishes to add, "so as to rotate both said support platen and said turntable about said axis of rotation." Pine's addition describes the result of the function performed, not the function itself. The Description of the Preferred Embodiments describes "a drive means ... for rotating the support platen." Col. 8, ll. 30. The Court finds the function performed by the drive means is "driving the rotation of the support platen and turntable."

FN12. In its February 3, 2004, filing, Pine stated that the parties agree on the function of "driving the rotation of the support platen." **[DE-89]** However, in the "Final Amended Joint Pre-Markman Hearing Brief" filed the next month, **[DE-104]** both parties changed their position. Troxler argued that the function is "driving the rotation of the support platen and turntable" and Pine contends it is "driving said support platen so as to rotate both said support platen and said turntable about said axis of rotation."

The parties disagree on the structure associated with this function. Troxler argues that a sprocket alone is sufficient structure to accomplish the function. **[DE-104 at 112.]** Pine asserts that the corresponding structure includes a sprocket and chain connected to the base assembly, and a drive. **[DE-104 at 112.]**

"Drive means" appears in the following Claims:

The compactor apparatus according to claim 2 further comprising a **drive means** operably connected to said support platen to rotate said support platen. Claim 12.

....

The apparatus for compacting material according to claim 19 further comprising a **drive means** operably connected to said support platen so as to rotate both said support platen and said turntable about said axis of rotation. Claim 29.

....

An apparatus for compacting material according to claim 34 further comprising a **drive means** operably connected to said support platen so as to rotate both said support platen and said turntable about said axis of rotation. Claim 37.

The corresponding structure can be determined from the remainder of the specification, which provides:

A **drive means** is operably connected to the base assembly 13, and more preferably is connected to the support platen 60 for rotating the support platen 60. Most preferably, the **drive means** includes a sprocket 66 axially aligned with and having a first face affixed to a lower face 53a of the support platen 60. As shown in FIG. 3, the sprocket 66 has a number of teeth circumferentially spaced about its periphery for receiving and meshing with a drive chain 67. The drive chain 67 is, in turn, operably connected to a suitable drive 68 for advancing the drive chain 67 so as to rotate the sprocket 66. Col. 8, ll. 30-41.

These provisions of the specification confirm that, contrary to Troxler's argument, a sprocket alone can not accomplish the function "driving the rotation of the support platen and turntable." To accomplish this function, the sprocket must interact with other structure in the apparatus. The sprocket is described above as having a number of teeth for "receiving and meshing with a drive chain." Further, "the drive means includes a sprocket 66 ... [which] has a number of teeth ... for receiving and meshing with a drive chain 67." Col. 8, ll. 33-35.

Pine argues that the "base assembly" is corresponding structure. However, the specification identifies only the support platen as a part of the base assembly which is corresponding structure. Col. 8, ll. 1-2. The entire "base assembly" is not corresponding structure because it is not necessary for "driving the rotation of the support platen and turntable."

The Court finds the function "driving the rotation of the support platen and turntable" is accomplished by the corresponding structure of the chain, sprocket and drive.

II. THE '133 PATENT

The '133 patent describes a gyratory compacting and mold extruding apparatus for compacting a specimen of material within a mold.

A. Mold Supporting Surface

The parties dispute the meaning of the limitation "mold supporting surface" and other limitations in which this limitation is the root. The Court will construe the limitation "mold supporting surface" and then turn its attention to whether the additional language in the limitations "mold supporting surface upon the frame," "first mold supporting surface," and "second mold supporting surface," modifies that construction.

Troxler argues that the proper construction for "mold supporting surface" is "the exterior or outside of an object or body that bears the weight or stress from a mold." **[DE-102 at 3.]** Pine argues that "mold supporting surface" should be construed to mean "a surface or outer boundary that supports a mold or bears the weight of the mold." **[DE-102 at 3.]**

A person of ordinary skill in the art would understand the limitation "mold supporting surface" to have the plain meaning "a surface or outer boundary that supports the mold or bears the weight or stress of the mold" in light of the claims and specification of the '133 patent. To determine whether the patentee deviated from the ordinary meaning and gave the term a novel or different meaning, it is appropriate to consult the intrinsic record.

"Mold supporting surface" appears in Claims 1, 5, 6, 7, 9, 10, 11, and 12 and is used consistently throughout the claims. Claim 1, which is representative of the claims, reads in pertinent part:

a frame having a **mold supporting surface** for supporting a mold, a mold carriage, mold carriage rotation means, a mold carriage tilt link assembly, a ram, and a ram driving assembly ... a mold material extruder supported by said frame, said mold material extruder having means for driving a vertically oriented extruder rod upward from said **mold supporting surface.**

Troxler does not propose a definition for the term "mold," and Pine incorporates its definition from the '655 patent.FN13 **[DE-102 at 3.]** Troxler and Pine are in general agreement on the definition for the terms "supporting" and "surface." Both parties propose to define "support" as "to bear the weight or stress of." With respect to "surface," Troxler offers "exterior or outside of an object or body," while Pine proposes "a surface or outer boundary." Based on a thorough review of the ' 133 patent, the Court finds that "mold supporting surface" is used in a manner consistent with its ordinary and customary meaning to a person of ordinary skill in the art.

FN13. "A hollow form for receiving, holding and shaping the material." **[DE-104 at 2.]**

Accordingly, the Court recommends that "mold supporting surface" be construed to mean "a surface or outer boundary that supports a mold or bears the weight or stress of the mold."

B. A Mold-Supporting Surface Upon the Frame

The limitation "mold supporting surface upon the frame" appears in Claim 6, which provides in pertinent part:

A gyratory compaction apparatus for compacting a material held in a mold as the mold is gyrated, the apparatus comprising: a frame, **a mold supporting surface upon the frame,** a mold for receiving material to be compacted, a power driven compaction ram ...

For the reasons stated in s. II(A), *supra,* the Court adopts and incorporates its construction of "mold supporting surface" as "a surface or outer boundary that supports a mold or bears the weight or stress of the mold." Therefore, the only words that remain to be construed are "upon" and "frame."

The parties do not dispute the construction of the term "upon," and its use in Claim 6 is consistent with its customary and ordinary meaning, "located on." The parties stipulated that "frame" is defined as "the arrangement of supporting members of a weight bearing structure composed of parts fitted together." FN14 **[DE-36 at 3.]** This definition is consistent with its ordinary and customary meaning to a person of skill in the art.

FN14. Subsequently, Pine proposed that the Court construe "frame" as "the constructional system that gives shape or strength; an underlying structure or skeleton; a basic structural unit onto or into which other constituents of a whole are fitted, to which they attach, or with which they are integrated." However, parties are bound by their stipulations and the Court will not address Pine's subsequent proposed construction.

Troxler seeks to add to the limitation "and covers the horizontal surface of the entire frame upon which the mold rests during gyration and compaction and during extraction." Neither the claims nor the specification contain the language Troxler argues should be included in the term's construction.

Accordingly, the Court recommends that the proper construction of "a mold supporting surface upon the frame" is "a surface or outer boundary located on the frame that supports a mold or bears the weight or stress of the mold."

C. A Mold Support Structure for Supporting Said Mold

The parties agree that the limitation "mold support structure for supporting the mold" in Claim 9 is a "means plus function" element governed by s. 112 para. 6. The parties also agree that the function to be performed is "supporting the mold," but disagree on what is the corresponding structure. **[DE-102 at 69.]** Troxler argues that the corresponding structure "includes the frame, first mold-supporting surface (surface A), second mold supporting surface (surface B), as well as the surface covering the entire frame." **[DE-102 at 69.]** Pine argues that the corresponding structure is a "base frame 27 which provides a horizontal surface 29." **[DE-102 at 69.]**

"Whether the language of a claim is to be interpreted according to 35 U.S.C. s. 112 para. 6, i.e., whether a claim limitation is in means-plus-function format, is a matter of claim construction and is thus a question of law." Apex, 325 F.3d at 1370 (internal quotation omitted).

The limitation "[a] mold support structure for supporting said mold" appears only once in the patent, in Claim 9, which reads:

A gyratory compactor apparatus for compacting a specimen of material while said specimen is gyrated, said apparatus comprising, in combination, a mold for holding said specimen, a **mold support structure for**

supporting said mold, a compacting ram positioned and driven for insertion into said mold to compact said specimen within said mold, a mold gyrating assembly in contact with said mold and powered to gyrate said mold while said compacting ram is inserted and driven into said mold and, a mold extractor for extracting material from said mold.

The Federal Circuit's precedent provides that "[a] claim limitation that actually uses the word 'means' invokes a rebuttable presumption that s. 112 para. 6 applies. By contrast, a claim term that does not use 'means' will trigger the rebuttable presumption that s. 112 para. 6 does not apply." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed.Cir.2002). Thus, the use of the term "means" is "central to the analysis." Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703 (Fed.Cir.1998).

The limitation "mold supporting structure for supporting the mold" lacks the operative "means" language and invokes the strong presumption that s. 112 para. 6 does not apply. To overcome the presumption requires a showing by a preponderance of the evidence "that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Lighting World, Inc., 382 F.3d at 1358 (Fed.Cir.2004) (internal citations omitted). In this case, that burden is easily met. The claim recites a function, but fails to recite definite structure for performing that function.

The Court agrees that the function this limitation performs is "supporting the mold." The next step requires the Court to "determine, what structure, if any, disclosed in the specification corresponds to the claimed function. In order to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function. This inquiry is undertaken from the perspective of a person of ordinary skill in the art." Cardiac Pacemakers, Inc. v. St. Judge Medical, Inc., 296 F.3d 1106, 1113 (Fed.Cir.2002) (internal citations omitted). "This duty to link or associate structure to function is the quid pro quo for the convenience of employing s. 112 P 6." B. Braun Medical v. Abbott Lab., 124 F.3d 1419, 1424 (Fed.Cir.1997). "Structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." Medical Instrumentation and Diagnostics Corp., 344 F.3d at 1210. Therefore, the Court looks to the specification for guidance.

The Abstract of the '133 patent provides in pertinent part:

A gyratory compacting and mold extruding apparatus for compacting a specimen of material within a mold as the mold is gyrated includes a **frame for supporting a mold,** a mold gyrating carriage, a compaction ram and ram driving assembly, and a mold specimen extruder.... A mold specimen extruder is provided on a common plane with the **surface which supports the mold** for gyration and compaction.

From this provision, it is clear that both a frame and surface are structures which correspond to the function of supporting the mold. That the frame and surface are corresponding structure is confirmed by the remainder of the specification. The Summary of the Invention provides in pertinent part:

In accordance with one aspect of the invention, a materials testing apparatus for subjecting a material to forces is provided which includes a mold for containing a quantity of material, a **mold supporting frame** in contact with a rotatable mold carriage also supported by the frame....

The Description of the Preferred Embodiments provides in pertinent part:

The **frame** 11 includes a lower portion 13 and an upper specimen mold receiving portion 15. The mold receiving portion 15 includes a **first mold supporting surface A,** an access door 16, a control pan el 17 for controlling the operations of the compactor, and an emergency stop button 18. The lower portion 13 includes access doors 14, a mold specimen extruder support surface 119, and **a second mold supporting surface B.** Col. 3, ll. 45-51.

....

As shown in phantom in FIG. 1A, in an alternate embodiment the lower portion 13 of **frame** 11 which supports **second mold supporting surface B** can be formed separate from the **frame** which supports **mold supporting surface A,** whereby the lower portion 13 is divisible. Vertically adjustable stands 127 allow **support surfaces A and B** to be precisely positioned in the same plane.

These provisions of the specification make clear that the "first mold-supporting surface," ("surface A") and "second mold-supporting surface," ("surface B") may be a single surface or separate surfaces. By using the language "in an alternate embodiment," the patentee indicates that single and separate structure configurations are possible. There is no support in the patent for Troxler's argument that "a mold support structure for supporting the mold" must include multiple support surfaces to accomplish the function of supporting the mold.

Accordingly, the Court recommends that the structures corresponding to the claim limitation "a mold support structure for supporting said mold" are the base frame and a mold supporting surface.

D. First Mold Supporting Surface

"First mold supporting surface" appears in Claims 7, 11 and 12. Claim 7 reads in pertinent part:

a frame having a **first mold supporting surface,** a mold gyrating assembly, a ram and a ram drive assembly ... a mold material extractor having a second mold supporting surface in a same horizontal plane with the **first mold supporting surface,** mold positioning brackets attached to the second mold supporting surface.

Claim 11 provides:

A materials testing machine having a first mold supporting surface proximate mold gyration and compaction machinery, and a second mold supporting surface proximate mold positioning brackets and a mold specimen extruder....

Claim 12 provides:

A combined gyratory compactor and mold extruder assembly comprising: a frame which supports a mold gyration assembly and a first mold supporting surface....

Troxler argues that the claim limitation "first mold supporting surface" should have two different constructions. With respect to Claim 7, Troxler argues the proper construction is "exterior or outside of an object or body that bears weight or stress from a mold and covers the horizontal surface of the entire frame

upon which the mold rests during gyration and compaction and during extraction." **[DE-102 at 78.]** For Claims 11 and 12, Troxler argues to construe the limitation as "an exterior or outside of an object or body (the frame) that is co-planar with all other mold-supporting surfaces, and that bears the weight or stress from a mold as the specimen is being gyrated and compacted." **[DE-102 at 84.]**

The Court rejects Troxler's proposed dual construction because "[u]nless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent." Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1331 (Fed.Cir.1999); *see also* Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed.Cir.1995) (Claim terms found in different claims must be interpreted consistently). The patent does not provide that the claim limitation "first mold supporting surface" should be given different meanings in Claims 7, 11 and 12. As such, the Court will provide one construction for the term "first mold supporting surface" which shall apply to all claims in which the claim limitation is found.

For the reasons stated in s. II(A), *supra,* the Court adopts and incorporates its construction of "mold supporting surface" as "a surface or outer boundary that supports a mold or bears the weight or stress of the mold." Therefore, the only word that remains to be construed is "first." The addition of the word "first" in this limitation, "first mold supporting surface," does not alter the meaning of the root limitation. Instead, "first" serves only to distinguish between the different mold supporting surfaces. See 3M Innovative Properties Co., 350 F.3d at 1371("It is common in patent drafting to use the terms 'first' and 'second' to distinguish between repeated instances of an element .").

The Court finds that the limitation "first mold supporting surface" is used consistently in all three claims and recommends that it be construed to mean "a surface or outer boundary that supports a mold or bears the weight or stress of the mold, as distinct from a second such surface."

E. Second Mold Supporting Surface

"Second mold supporting surface" appears in Claims 7, 8, 11 and 12 and is used consistently throughout the claims. Claim 7, which is representative, reads in pertinent part:

a mold material extractor having a **second mold supporting surface** in a same horizontal plane with the first mold supporting surface, mold positioning brackets attached to the **second mold supporting surface,** and a vertically oriented extractor rod operative to rise from said **second mold supporting surface** into said mold to extract material from said mold.

For the reasons stated in s. II(A), *supra,* the Court adopts and incorporates its construction of "mold supporting surface" as "a surface or outer boundary that supports a mold or bears the weight or stress of the mold." Therefore, the only word that remains to be construed is "second." As previously discussed in s. II(D), *supra,* the use of the word "second" serves only to distinguish between repeated instances of an element, in this case, the different mold supporting surfaces. *See* 3M Innovative Properties Co., 350 F.3d at 1371.

Claim 7 describes the "second mold supporting surface" as being "in a same horizontal plane" as the first mold supporting surface; as associated with the mold material extractor; as having mold positioning brackets attached to it; and as the site from which a vertically oriented rod rises into the mold. Claim 8 adds nothing the features described above. Claim 11 adds that the "second mold supporting surface" is "proximate mold

positioning brackets and mold specimen extruder" and confirms its relationship to the vertically oriented rod. Claim 12 only mentions the structure.

Troxler seeks to add the limitation, "that is co-planar with all other mold-supporting surfaces, and that bears weight or stress from a mold as the material is being extracted from the mold and contains an aperture, sleeve or hole that receives a vertically oriented rod permitting the rod to rise from the surface" into the claim. The language Troxler seeks to add is not found anywhere in the text of the patent.

The Court recommends the proper construction of the claim limitation "second mold supporting surface" is "a surface or outer boundary that supports a mold or bears the weight or stress of the mold, as distinct from a first such surface and in the same horizontal plane with the first supporting surface."

F. Operative to Rise From Said Second Mold Supporting Surface Into Said Mold

Troxler argues the proper construction is "having the power to move upward, emerge or protrude from the second mold-supporting surface through an aperture, sleeve or hole and into the mold through its bottom." **[DE-102 at 97.]** Pine argues the proper construction is "having the power to move upward, emerge or protrude from the second mold-supporting surface into the mold." **[DE-102 at 97.]**

"Operative to rise from said second mold supporting surface into said mold" appears in Claim 7. Claim 7 reads in pertinent part:

a vertically oriented extractor rod **operative to rise from said second mold supporting surface into said mold** to extract material from said mold.

Troxler's proposed construction seeks to import limitations into the claim that are not found in the patent. The words "aperture" and "hole" do not appear in the text of the '133 patent. The word "sleeve" appears only once, in the Description of Preferred Embodiments, which provides in pertinent part:

Guide frame 26 further includes a central vertical passage 56 lined with a ram sleeve bearing 57 for receiving and guiding a ram 58 linearly along a vertical axis into the open top of mold 20.

This passage makes clear that the "sleeve" relates to the ram which enters the open top of the mold, which is unrelated to the limitation "operative to rise from said second mold supporting surface into said mold."

Because the Court has previously construed the limitation "second mold supporting surface" in s. II(E), *supra,* the only remaining terms to be construed are "operative" and "rise." The parties are in basic agreement on the construction of the terms "operative" and "rise." Pine proposes to define "operative" as "having the power of acting; exerting force or influence; engaging in or doing work" and to define "rise" as "to move up from the horizon; to ascend; move upward; to extend upward; to become lifted up or raised; lift; a movement upward." Troxler proposes to define "operative" as "having the power of acting" and "rise" as "to move upward or to emerge." The parties' proposals are in accord with the ordinary and customary meaning to a person of skill in the art.

Accordingly, the Court recommends the proper construction for the claim limitation "operative to rise from said second mold supporting surface into said mold" is "having the power to move upward, emerge or protaide from the second mold-supporting surface into said mold."

G. Positioned ... to Rise From Said Second Mold Supporting Surface

The parties agree that the proper construction for the limitation "positioned ... to rise from said second mold supporting surface" includes "placed in the proper position to rise from the second mold-supporting surface." **[DE-102 at 105.]** To this, Troxler seeks to add "and requires that the rod be beneath the mold-supporting surface and that the axis of the rod be collinear with the central longitudinal axis of the aperture in the second mold-supporting surface." Id. Troxler's proposed addition is not contained in the language of the claim, nor anywhere in the specification. The Court will not construe the claim term to include limitations not supported by the patent.

"Positioned ... to rise from said second mold supporting surface" appears in Claim 12, which reads in pertinent part:

A combined gyratory compactor and mold extruder assembly comprising: ... a mold specimen extruder having an extrusion rod **positioned** and powered **to rise from the second mold supporting surface.**

"[A] claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent." Rexnord Corp., 274 F.3d at 1342. Because the Court has previously construed the limitation "second mold supporting surface" in s. II(E), *supra,* and "rise" in s. II(F), *supra*., the only remaining term to be construed is "positioned." The claim limitation "positioned" has an ordinary meaning that is consistent with its use in Claim 12. It means "to put in or place in the proper position."

The Court recommends the proper construction for "positioned ... to rise from said second mold supporting surface" is "placed in the proper position to move upward, emerge or protrude from the second mold supporting surface."

H. For Insertion of Said Extractor Rod

The parties agree that the limitation "for insertion of said extractor rod" should be construed as "for introduction of the extractor rod up into the body of the mold." **[DE-102 at 56.]** To this construction, Troxler would add "through its bottom."

"For insertion of said extractor rod" appears in Claim 8, which reads:

The gyratory compactor apparatus of claim 7 wherein said mold is in the form of a cylinder having a flange extending radially from an outer periphery of said cylinder, the apparatus further comprising mold positioning brackets which extend from said second mold supporting surface and engage said flange to position and hold said mold **for insertion of said extractor rod.**

Troxler's proposed construction is confirmed by examining the patent itself. Claim 7, on which Claim 8 depends, provides:

a mold material extractor having a second mold supporting surface in a same horizontal plane with the first mold supporting surface, mold positioning brackets attached to the second mold supporting surface, and **a vertically oriented extractor rod operative to rise from said second mold supporting surface into said mold to extract material from said mold.**

The Abstract provides further confirmation that the extruder rod is inserted into the bottom of the mold:

The mold positioning extruder brackets 122 fit over a radial flange 48 of mold 20 to retain the mold against surface B as the extruder rod is driven vertically upward into the mold ....an **extrusion rod is powered to rise vertically through the bottom of the mold.** Col. 4., ll. 35-38.

....

The mold is transferred, for example by sliding without lifting, upon surface A into position in mold positioning extruder brackets 122 for power-assisted extrusion or extraction of the specimen from the mold by extruder 19 which, by operation of hydraulic hand pump 109 or electric screw jack assembly 130, **drives a** cylinder **or screw or extruder rod vertically upward against the mold bottom plate to push the specimen out of the open top of the mold.** Col. 11, ll. 15-23.

"Just as claims may not be limited to preferred embodiments, claims may not be broadened beyond the scope supported by the specification." Innnovad, Inc. v. Microsoft Corporation, 99 F.Supp.2d at 772 (internal citations omitted).

Accordingly, the Court recommends the proper construction of the claim limitation "for insertion of said extractor rod" is "for introduction of the extractor rod up into the body of the mold through its bottom."

I. Mold Gyrator for Gyrating the Mold; Mold Gyrator; Mold Gyratory Mechanism; Mold Gyrator Assembly

The parties disagree about how the limitations "mold gyrator for gyrating the mold," "mold gyrator," "mold gyratory mechanism," and "mold gyratory assembly" should be construed. Troxler argues the terms are written in "means plus function" language and are governed by 35 U.S.C. s. 112 para. 6. **[DE-102 at 20.]** Pine argues that the disputed terms are synonymous and should be construed to mean "a device or apparatus which imparts a gyratory motion to a mold containing a specimen." **[DE-102 at 20.]**

"Mold gyrator for gyrating the mold," "mold gyrator," "mold gyratory mechanism," and "mold gyratory assembly" appear in Claims 6, 7, 9, 10, 11, and 12. These limitations do not appear anywhere in the remainder of the specification. Claim 7, which is representative of claims containing the limitation "mold gyrating assembly," reads in pertinent part:

A gyratory compactor apparatus for subjecting a material to forces, comprising: a frame having a first mold supporting surface, a **mold gyrating assembly,** a ram and a ram drive assembly ... a mold gyrating assembly in contact with said mold and operative to gyrate a vertical axis of said mold relative to a vertical axis of said ram as said ram is inserted and driven into said mold cavity.

Claim 11, which is representative of claims containing the limitation "a mold gyrating mechanism," reads in pertinent part:

A materials testing machine having a first mold supporting surface proximate mold gyration and compaction machinery, and a second mold supporting surface proximate mold positioning brackets and a mold specimen extruder, said mold gyration and compaction machinery including a **mold gyrating mechanism** which gyrates a vertical axis of the mold and a compaction ram insertable into the mold as the mold is

gyrated.

Claim 6, which is representative of claims containing the limitation "mold gyrator for gyrating the mold," reads in pertinent part:

A gyratory compaction apparatus for compacting a material held in a mold as the mold is gyrated, the apparatus comprising: ... **a mold gyrator for gyrating the mold** as the compaction ram is inserted into the mold.

Because the limitations "mold gyrator for gyrating the mold," "mold gyrator," "mold gyratory mechanism," and "mold gyratory assembly" do not include the term "means," the Court begins with the strong presumption that s. 112 para. 6 does not apply to these limitations. Lighting World, 382 F.3d at 1359 ("[T]he presumption flowing from the absence of the term "means" is a strong one that is not readily overcome.").

An "assembly" would be understood by a person of ordinary skill in the art as "a collection of parts so assembled as to form a complete machine, structure, or unit of a machine." The "mold gyrating assembly," disclosed in Claims 7, 9, and 12, is not an abstract means for performing a specified function, it is a specific device "in contact with the mold," "operative to gyrate a vertical axis of said mold relative to a vertical axis' of the ram and supported by the frame." Each of these claims denotes not only the function performed, but the structure, "gyrating assembly," as well as the location, "in contact with said mold." With such recitation, the limitation does not overcome the presumption that 112 para. 6 does not apply. *See* Lighting World, 382 F.3d at 1361 ("The fact that more than one structure may be described by ['connector assembly'], or even that the term may encompass a multitude of structures, does not make the term 'connector assembly' any less a name for structure.").

Claim 11 describes the "mold gyrating mechanism" as structure "which gyrates a vertical axis of the mold" and would be so understood by a person of ordinary skill in the art considering the '133 patent as a whole. "Mechanism" would be commonly understood by a person of ordinary skill in the art as "a piece of machinery or a structure of working parts functioning together to produce an effect." Though defined solely in terms of its function, the Court concludes that "mold gyrating mechanism" is identical to the limitation "mold gyrating assembly" as used in Claims 7, 9, and 12.

The term "mold gyrator for gyrating the mold" FN15 apart from operating "as the compaction ram is inserted into the mold," is not otherwise described in Claim 6. A person of ordinary skill in the art would understand "gyrator" to be "that which gyrates." Furthermore, the parties stipulated that "gyrated" should be construed to mean that "one end of an axis revolves in a circle around something." **[DE-36 at 3.]** From these definitions, the operation of the "mold gyrator for gyrating the mold" is clearly "to revolve the mold around a central point or axis."

FN15. The terms "mold gyrator" and "mold gyrator for gyrating the mold" are synonymous, therefore, no separate analysis is required.

Pine's argument that the terms "mold gyrating assembly," "mold gyrating mechanism," and "mold gyrator for gyrating the mold" all refer to the same structure and are used interchangeably is borne out by the claims. Each term refers to the structure which is "in contact with said mold and operative to gyrate a vertical axis of said mold relative to a vertical axis of said ram as said ram is inserted and driven into said

mold cavity;" FN16 "in contact with said mold and powered to gyrate said mold while said compacting ram is inserted and driven into said mold;" FN17 "which gyrates a vertical axis of the mold and a compaction ram insertable into the mold as the mold is gyrated;" FN18 and, the "mold gyrator ..." which gyrates the mold "as the compaction ram is inserted into the mold." FN19 Though no structure is explicitly recited for the "mold gyrator for gyrating the mold," the phrase is shorthand for referencing the "mold gyrating assembly" and "mold gyrating mechanism."

FN16. Claim 7, "mold gyrating assembly."

FN17. Claim 9, "mold gyrating assembly."

FN18. Claim 11, "mold gyrating mechanism."

FN19. Claim 6, "mold gyrator for gyrating the mold."

Accordingly, the Court recommends the proper construction of the claim limitations "mold gyrator for gyrating the mold," "mold gyrator," "mold gyratory mechanism," and "mold gyratory assembly" is "a device or apparatus which imparts a gyratory motion to a mold."

J. Mold Gyration and Compaction Machinery

The parties dispute the meaning of "mold gyration and compaction machinery." Troxler argues that this term is written in functional language and is therefore governed by s. 112 para. 6. **[DE-102 at 121 .]** Pine argues the proper construction of "mold gyration and compaction machinery" is "a machine which imparts a gyratory motion to a mold which holds a specimen, while simultaneously compacting the specimen." **[DE-102 at 121.]**

"Mold gyration and compaction machinery" appears in Claim 11, which reads in pertinent part:

a materials testing machine having a first mold supporting surface proximate **mold gyration and compaction machinery,** and a second mold supporting surface proximate mold positioning brackets and a mold specimen extruder, said **moid gyration and compaction machinery** including a mold gyrating mechanism which gyrates a vertical axis of the mold and a compaction ram insertable into the mold as the mold is gyrated, and said mold specimen extruder including a vertically oriented extrusion rod powered to rise from the second mold supporting surface into a mold.

The plain language of the Claim reveals that the "mold gyration and compaction machinery" includes a "mold gyrating mechanism which gyrates a vertical axis of the mold and a compaction ram insertable into the mold as the mold is gyrated." Col. 14, ll. 2-4. Such recitation of structure precludes the application of s. 112 para. 6. *See* Cole, 102 F.3d at 531 (A claim falls outside the ambit of s. 112 para. 6 if it recites a "definite structure which performs the described function.").

The parties stipulated that "gyrate" means "one end of an axis revolves in a circle about something." **[DE-36**

at 3.] "Gyration," as a variation of "gyrate," is construed in accordance with the stipulated construction, which is in accord with the ordinary and customary meaning to a person of skill in the art. "Compaction" would be understood by a person of ordinary skill in the art to mean "the act or action of compacting or being compacted ." "Compact" has the ordinary meaning of "to compress or make dense." "Machinery" has the ordinary meaning of "a group of parts or machines that are arranged to perform a particular operating or machining function." A careful reading of the '133 patent reveals that the combination of the constituent words into the claim limitation "mold gyration and compaction machinery" does not negate the commonly understood meanings.

The Court recommends that the proper construction of "mold gyration and compaction machinery" is "a group of parts or machines that are arranged to impart a gyratory motion to a mold which holds a specimen, while simultaneously compacting the specimen ."

K. Material Extractor, Mold Material Extractor, Mold Extractor, and Mold Material Extruder Assembly

The parties disagree about the proper construction of the limitations "material extractor," "mold material extractor," "mold extractor," and "mold material extruder assembly." The parties agree that the limitations are synonymous and should be construed as a single term. Pine argues the proper construction is "a mechanism or device used to extrude or extract a compacted specimen from a mold, situated adjacent and joined to the frame to make a complete apparatus." **[DE-102 at 44.]** Troxler argues the proper construction is "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame." **[DE-102 at 44.]**

"Material extractor," "mold material extractor," "mold extractor," and "mold material extruder assembly" appear in Claims 6, 7, 9, and 10. Claim 6 reads in pertinent part:

a **material extractor** for extracting compacted material from the mold, the **material extractor** having a mold supporting surface and a vertically oriented rod.

Claim 7 reads in pertinent part:

a **mold material extractor** having a second mold supporting surface in a same horizontal plane with the first mold supporting surface.

Claim 9 reads in pertinent part:

a **mold extractor** for extracting material from said mold.

Claim 10 reads in pertinent part:

a **mold material extruder assembly** for removing compacted material from the mold.

Claims "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. Therefore, the Court turns its attention to the specification, which provides in pertinent part:

A mold specimen extruder (also referred to herein equivalently as an "extruder," "extractor," "specimen

extractor" or "material extractor"), indicated generally at 19, for extruding or extracting a compacted specimen from a mold 20, is in this embodiment mounted in lower portion 13 of frame 11 to protrude from the second mold supporting surface B which is in the same plane as the first mold supporting surface A on which the bottom of a mold 20 is supported within mold receiving portion.... Col. 3, ll. 53-62.

....

As shown in phantom in FIG. 1A, in an alternate embodiment the lower portion 13 of frame 11 which supports second mold supporting surface B can be formed separate from the frame which supports mold supporting surface A, whereby the lower portion 13 is divisible.

These provisions make clear that the limitations "material extractor," "mold material extractor," "mold extractor," and "mold material extruder assembly" are synonymous. They also make clear that these limitations can be connected to the mold gyrator apparatus or separate from the apparatus. Troxler's proposed construction, "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame," is therefore confirmed by the claims and specification.FN20

FN20. The term "integral" means "composed of constituent parts making a whole," and connotes separability.

The Court recommends the proper construction to be applied to the claim limitations "material extractor," "mold material extractor," "mold extractor," and "mold material extruder assembly" is "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame."

L. Material Extractor Having a Mold Supporting Surface

The parties dispute the meaning of the limitation "material extractor having a mold supporting surface." Troxler argues the proper construction is "exterior or outside of an object or body that is a component of the mold supporting surface upon the frame and co-planar with all other mold-supporting surfaces, and that bears weight or stress from a mold as the material specimen is being extracted from the mold and that contains an aperture, sleeve or hole for receiving a vertically oriented rod permitting the rod to rise from the surface." **[DE-102 at 60.]** Pine argues the proper construction is "a mechanism or device used to extrude or extract a compacted specimen from a mold having a surface or outer boundary that supports a mold or bears the weight of the mold, situated adjacent and joined to the frame to make a complete apparatus." **[DE-102 at 60.]**

"Material extractor having a mold supporting surface" appears in Claim 6 and provides in pertinent part:

a material extractor for extracting compacted material from the mold, the **material extractor** having **a mold supporting surface** and a vertically oriented rod powered to rise vertically from the mold supporting surface of the frame to extract material from a mold.

Troxler's proposed construction of the claim limitation imports numerous limitations that are not recited in the body of the claim or anywhere in the text of the patent. This Court declines to adopt Troxler's construction "because courts can neither broaden nor narrow claims to give the patentee something different than what he has set forth." Oak Technology, Inc. v. International Trade Com'n, 248 F.3d 1316, 1329

(Fed.Cir.2001) (internal citations omitted).

Pine argues that the patentee acted as its own lexicographer and defined the term as "a mold specimen extruder (also referred to herein equivalently as an 'extruder', 'extractor', 'specimen extractor' or 'material extractor') ... for extruding or extracting a compacted specimen from a mold" '133 Patent, Col. 3, ll. 53-56. **[DE-101 at 76.]** In the portion of the specification cited above by Pine, the patentee clearly indicated the intent that "mold specimen extruder" have the same meaning as "extruder," "extractor," "specimen extractor," and "material extractor." *See* Process Control Corporation v. Hydroclaim Corporation, 190 F.3d 1350, 1357 (Fed.Cir.1999) (notice that a patentee has acted as his own lexicographer must be such "so as to put a reasonable competitor or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim term").

The Court has previously construed the terms which make up the limitation "material extractor having a mold supporting surface." The Court construed the limitation "material extractor" to be an "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame." s. II(K), *infra*. Additionally, the Court construed the limitation "mold supporting surface" to be "a surface or outer boundary that supports a mold or bears the weight or stress of the mold." FN21

FN21. s. II(A), *supra*.

The Court recommends the proper construction of the claim limitation "material extractor having a mold supporting surface" is an "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame having a surface or outer boundary that supports a mold or bears the weight or stress of the mold, situated adjacent and joined to the frame to make a complete apparatus."

M. Mold Specimen Extruder

Troxler argues that the proper construction is "an apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame." **[DE-102 at 139.]** Pine argues the proper construction is "a mechanism or device used to extrude or extract a compacted specimen from a mold." **[DE-102 at 139.]**

"Mold specimen extruder" appears in Claims 11 and 12. The limitation "mold specimen extruder" is used consistently throughout the claims. Claim 11, which is representative, reads pertinent part:

mold positioning brackets and a **mold specimen extruder,** said mold gyration and compaction machinery including a mold gyrating mechanism which gyrates a vertical axis of the mold and a compaction ram insertable into the mold as the mold is gyrated, and said **mold specimen extruder** including a vertically oriented extrusion rod.

The Court previously construed the limitation "material extractor" to mean "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame." FN22 As previously discussed in s. II(K), *supra,* "mold specimen extruder" is synonymous with "material extractor." *See* Col. 3, ll. 53-56 ("A mold specimen extruder (also referred to herein equivalently as an "extruder," "extractor," "specimen extractor" or "material extractor")....).

FN22. The same construction applies to the term's synonyms "mold material extractor," "mold extractor," and "mold material extruder assembly."

Therefore, the Court declines to construe the term "mold specimen extruder" because it is synonymous with the previously construed term "material extractor." FN23

FN23. s. II(K), *supra*.

N. A Mold Extractor for Extracting Material From Said Mold

The parties disagree about the construction of the limitation "a mold extractor for extracting said material from said mold." Troxler contends that this term recites a function to be perfomied and is therefore governed by s. 112 para. 6. **[DE-102 at 116.]** Pine argues the proper construction is "a mechanism or device used to extrude or extract a compacted specimen from a mold, situated adjacent and joined to the mold support structure to make a complete apparatus." **[DE-102 at 116.]**

"A mold extractor for extracting material from said mold" appears in Claim 9, which reads in pertinent part:

to gyrate said mold while said compacting ram is inserted and driven into said mold and, **a mold extractor for extracting material from said mold.**

The term "mold extractor" has previously been construed for this patent as "apparatus for extracting or extruding a material specimen from a mold that is an integral component of the frame." FN24 The limitation "a mold extractor for extracting material from said mold" is synonymous with limitation "mold extractor."

FN24. s. II(K), *supra*.

Therefore, the Court declines to construe the term "a mold extractor for extracting material from said mold" separately from the term "mold extractor" and its synonyms.

O. Vertically Oriented Rod

The parties are in basic agreement as to the vertical rod and its orientation. Troxler argues it is a "slender bar, including a screw ... in a definite upright position with respect to other objects." **[DE-102 at 71.]** Pine argues it is "an elongated shaft, dowel, or screw which is positioned such that its axis is vertical with respect to the horizon." *Id*. To this essentially common construction, Troxler would add, "that is fixed to the frame ."

"Vertically oriented rod" appears in Claim 6, which reads in pertinent part:

... a material extractor for extracting compacted material from the mold, the material extractor having a mold supporting surface and a **vertically oriented rod** powered to rise vertically from the mold supporting surface of the frame to extract material from a mold.

Troxler's addition, "that is fixed to the frame" is not found in Claim 6 or anywhere in the remainder of the

specification.

"Vertical" has the commonly understood meaning of "perpendicular to the plane of the horizon or a primary axis." "Rod" is commonly understood to mean "a slender, cylindrically-shaped metal or wood bar." The use of these words in Claim 6 is consistent with the ordinary and customary meaning to a person of skill in the art.

The Court recommends the proper construction of the claim limitation "vertically oriented rod" is "a slender bar positioned such that its axis is perpendicular with respect to the horizon."

P. Engage

The parties disagree on the proper construction of the limitation "engage." Troxler argues the proper construction is "to interlock or cause to interlock." **[DE-102 at 112.]** Pine argues the proper construction is "to come into contact or interlock with." **[DE-102 at 112.]**

"Engage" appears in Claim 8, which reads in pertinent part:

... the apparatus further comprising mold positioning brackets which extend from said second mold supporting surface and engage said flange to position and hold said mold for insertion of said extractor rod.

The limitation "engage" would be commonly understood by a person of skill in the art to mean "to come into contact or interlock with ." This meaning is consistent with the use of the limitation "engage" in Claim 8 and throughout the '133 patent. Troxler's argument, that "engage," as used in Claim 8, means "to cause to interlock" finds no support in the specification, which provides:

The mold positioning extruder brackets 122 fit over a radial flange 48 of mold 20 to retain the mold against surface B as the extruder rod is driven vertically upward into the mold. Power controls 134 for extending and retracting the electric screw jack extruder are mounted on the exterior of cabinet 12. Col. 4, ll. 36-41.

....

The mold is transferred, for example by sliding without lifting, upon surface A into position in mold positioning extruder brackets 122 for power-assisted extrusion or extraction of the specimen from the mold by extruder 19 which, by operation of hydraulic hand pump 109 or electric screw jack assembly 130, drives a cylinder or screw or extruder rod vertically upward against the mold bottom plate to push the specimen out of the open top of the mold. Col. 11, ll. 15-20.

....

An unobvious advantage of this novel arrangement and combination of gyration compaction machinery and mold specimen extruder is the ease with which a mold can be removed from the compaction machinery and placed in position for power-assisted extrusion of the specimen from the mold immediately proximate to and on the same mold-supporting surface. In other words, the mold does not have to be lifted to move it from the compaction machinery to the extruder. Col. 4, ll. 7-15.

These provisions make clear that the action which causes the mold to interlock with the mold positioning

brackets is performed by the operator of the apparatus. The operator may slide the mold, without lifting, to place "in position for power-assisted extrusion of the specimen." In fact, the patentee describes this feature as an "unobvious advantage of this novel arrangement."

The Court recommends the proper construction for the claim limitation "engage" is "to come into contact or interlock with."

Q. Powered

The parties dispute the meaning of the limitation "powered." Troxler argues the proper construction is "having, equipped with, capable of operating with, or able to produce, power." **[DE-102 at 146.]** Pine argues the proper construction is "operating with or by power." **[DE-102 at 146.]**

"Powered" appears in Claims 3, 6, 9, 10, 11 and 12 and is used consistently throughout the claims. Claim 3 and 6, which are representative, read respectively in pertinent part:

... the apparatus of claim 1 wherein said mold material extruder comprises an electrically **powered** screw jack operatively connected to drive said vertically oriented extruder rod.

....

... a **power driven** compaction ram for compacting material in the mold by insertion of the ram into the mold ... a material extractor for extracting compacted material from the mold, the material extractor having a mold supporting surface and a vertically oriented rod powered to rise vertically from the mold supporting surface of the frame to extract material from a mold.

"Powered" would be understood by a person of ordinary skill in the art to mean "operating by or with power." The portion of Troxler's proposed construction, "or able to produce power" is not related in any way to the claimed invention, and further, is not consistent with the use of the word in the '133 patent.

The Court recommends the proper construction for the claim limitation "powered" is "operating by or with power."

CONCLUSION

Having considered the motion and the pertinent parts of the record and being otherwise fully advised in the premises, it is RECOMMENDED that the disputed terms and phrases of the 5,323,655 and 5,606,133 patents are construed as set forth in this Order.

DONE and ORDERED.