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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

BAL SEAL ENGINEERING COMPANY, INC.,
a California corporation,

Plaintiff,

v.

JAY QIANG HUANG, an individual; and
SAINT-GOBAIN PERFORMANCE PLASTICS
CORPORATION, a California corporation,

Defendants.

Civil No. 10cv819-CAB

**CLAIM CONSTRUCTION ORDER FOR
U.S. PATENT NO. 5,160,122**

Before the Court are the parties’ joint motions for claim construction for U.S. Patent No. 5,160,122 (“the ‘122 Patent”). Pursuant to the Patent Local Rules and this Court’s scheduling order, the plaintiff Bal Seal Engineering Co., Inc., and defendants Jay Quiang Huang and Saint-Gobain Performance Plastics Corp., submitted opening and responsive briefs and Joint Claim Construction Charts regarding the proposed constructions for certain terms and phrases of this patent. The Court held a claim construction hearing on March 25, 2011.

The purpose of a claim construction hearing is to resolve “disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). District courts are not required to construe every limitation present in the patent’s asserted claims. *02 Micro Intern, Ltd. v. Beyond Innovation Technology Co., Ltd.*, 521 F.3d 1351, 1362 (Fed.

1 Cir. 2008). “When the parties present a fundamental dispute regarding the scope of a claim term, it is the
2 court’s duty to resolve it.” *Id.*

3 The parties identified Claims 1, 3, 5, 9, 12 and 13 of the ‘122 Patent as at issue in this litigation
4 and presented certain limitations of those claims for construction. Having considered the submissions of
5 the parties and the arguments of counsel, the Court construes the limitations at issue as set forth in the
6 Attachment to this Order.

7 **IT IS SO ORDERED.**

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9 DATED: August 1, 2011

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12 **CATHY ANN BENCIVENGO**
13 United States Magistrate Judge
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Attachment
Claim Construction for
U.S. Patent No. 5,160,122

**Claim Construction
for U.S. Patent 5,160,122**

Claim 1. *A spring assembly comprising:*

a plurality of coil means, interconnected with one another in a spaced-apart relationship, for causing the spring assembly to exert a force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction; and

elastic material means, disposed around and between said plurality of coil means and having a hollow cross-section, for modifying the force exerted by the spring assembly in response to deflection of the spring assembly along said loading direction.

Terms for Construction

A plurality of coil means, interconnected with one another in a spaced-apart relationship, for causing the spring assembly to exert a force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction

The Court interprets this claim language in accordance with 35 U.S.C. §112, paragraph 6 (“section 112(6)”), which states: An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof (“means-plus-function claim”). *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1536 (Fed. Cir. 1991). A claim limitation that actually uses the word “means” will invoke a rebuttable presumption that §112(6) applies. *Personalized Media Comm’n, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 703-04 (Fed. Cir. 1998) (“Means-plus-function claim”). Claim 1 uses the word “means” for defining a plurality of coil means. Both parties agree the rules of section 112(6) apply.

The language of Claim 1 includes the specific structural recitation that the means be “interconnected with one another in a spaced-apart relationship.” This limitation of Claim 1 is consistent with the corresponding structures for the plurality of coil means depicted in the specification. The recitation of some structure in a means-plus-function element does not preclude the applicability of section 112(6). *Laitram Corp.*, 939 F.2d at 1536.

“The construction of a means-plus-function limitation includes two steps. First, [the court determines] the claimed function. Second, [the court identifies] the corresponding structure in the written description that performs that function.” *JVW Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2004) (citation omitted). The function of the plurality of coil means is to cause the spring assembly to exert a force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction.

The Court looks to the specification for the corresponding structure. Figures 1, 1a and 1b show a spring assembly with “a plurality of coils interconnected with one another in a spaced-apart relationship” for the function described in Claim 1. Col. 4, lines 47-53. The spring assembly may include “circular coils, not canted to a centerline thereof, or . . . canted coil assemblies.” Col. 4, lines 60-63. Consequently, the parties’ proposed joint construction limiting the plurality of coil means to canted coils is too limiting.

The Court finds that section 112(6) applies, modifies the parties' joint construction of **a plurality of coil means, interconnected with one another in a spaced-apart relationship, for causing the spring assembly to exert a force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction**, and defines it as:

Two or more spaced-apart coils of a circular or canted coil spring, and equivalents thereof.

Elastic material means, disposed around and between said plurality of coil means and having a hollow cross-section, for modifying the force exerted by the spring assembly in response to deflection of the spring assembly along said loading direction

Claim 1 uses the word "means" for defining elastic material. Both parties agree the rules of section 112(6) apply. The function of the elastic material means is for modifying the force exerted by the spring assembly in response to deflection of the spring assembly along said loading direction. The language of Claim 1 includes the specific structural recitation that the means be "disposed around and between said plurality of coil means and having a hollow cross-section."

The Court looks to the specification for the corresponding structure. Figure 1 depicts elastic material means disposed around and between the plurality of coils with a hollow cross-section for the function described in Claim 1. Col. 4, lines 54-60. The elastic material, or elastomer, of Figure 1 is described as "any synthetic or natural material capable of recovering its original size and shape after deformation. That is, the material is resilient." Col. 6, lines 8-12. Examples of such resilient material are given at Col. 7, lines 57-62.

The Court finds that section 112(6) applies, modifies the parties's joint construction of **elastic material means, disposed around and between said plurality of coil means and having a hollow cross-section, for modifying the force exerted by the spring assembly in response to deflection of the spring assembly along said loading direction**, and defines it as:

A resilient elastic material, and equivalents thereof.

Claim 3. *The spring assembly according to claim 1 or 2 wherein said elastic means include means, defining a shape thereof, for positioning said plurality of coils in order that the loading direction is approximately perpendicular to the centerline tangent.*

Terms for Construction

Means, defining a shape thereof, for positioning said plurality of coils in order that the loading direction is approximately perpendicular to the centerline tangent

Claim 3 uses the word “means” for further defining the shape of elastic material means. Both parties agree the rules of section 112(6) apply. The function of the shape of elastic material is for positioning said plurality of coils in order that the loading direction is approximately perpendicular to the centerline tangent.

The Court looks to the specification for the corresponding structure. The shapes of the elastic embodied in Figs. 25 and 27 are specifically linked to the claimed function – positioning the plurality of coils to load approximately perpendicular to the centerline tangent. Col. 9, lines 30-36 (“the shape of the elastic which includes depending portions ... which provide a means for positioning the plurality of coils in order that the loading direction is approximately perpendicular to the centerline”). The specification discusses shape means that can position the coils as described at Col. 2, lines 41-47, however the only shapes disclosed to provide this function are those embodied in Figs. 25 and 27, which include depending portions substantially larger than the diameter of the plurality of the coil means to effect the position the coils.¹

The shape of the elastic means disclosed to position the plurality of coils, in order that the loading direction is approximately perpendicular to the centerline tangent, is a shape in which the elastic material includes depending portions substantially larger than the diameter of the plurality of coils and fully surrounds the plurality of coils.

The Court finds that section 112(6) applies, and **means, defining a shape thereof, for positioning said plurality of coils in order that the loading direction is approximately perpendicular to the centerline tangent** is defined as:

A shape that surrounds the coils and has one or more depending portions substantially larger than the diameter of the plurality of coils, and equivalents thereof.

The Court recognizes that this interpretation of the elastic means shape in Claim 3 essentially mirrors the language set forth in Claim 4, which depends from Claim 3, and would therefore appear to run afoul of the doctrine of claim differentiation. However, the presence of a dependent

¹The specification at Col. 4, lines 28-25, links the structures illustrated in Figs. 24a and 24b to this function. This is believed to be an error in the text of the “Brief Description of the Drawings.” Commencing at Col. 4, line 18-22, this section of the specification describes Fig. 22 as an embodiment of the invention with a first and second plurality of coils. Fig. 22 has only one plurality of coils. The description at Col. 4, line 18-22 properly applies to Figs. 23a and 23b. The description in Col. 4 goes on to compare the structures of Figs. 24a and 24b to Figs. 23a and 23b. It then concludes that Figs. 24a and 24b show the elastic material having “a substantially greater dimension than the diameter of the plurality of coils which provides a means for positioning the plurality of coils in order that the loading direction is approximately perpendicular to the centerline tangent.” Col. 4, lines 28-35. Figs. 24a and 24b, which in this regard are no different than Figs. 23a and 23b, do not, however, illustrate this statement and there is no reference to the shape of the elastic material providing a means for positioning the coils in the detailed discussion of these figures at Col. 9, lines 5-26 to link those embodiments to this function. The statement regarding the dimension of the elastic material providing a means for positioning at Col. 4, lines 31-35 appears to properly apply to Figs. 25 and 27 as examples of the elastic material shaped to position the coils.

claim that specifically claims the only disclosed structure for the means clause does not alter the claim from which it depends from being interpreted as statutorily mandated by section 112(6). In this case Claim 3 cannot be interpreted to cover alternative, non-disclosed structures, that are not equivalents of the disclosed structure, just because dependent Claim 4 specifies the only disclosed means. *Laitram*, 939 F.2d at 1538; *Cross Medical Prod. Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1303-1304 (Fed. Cir. 2005). Further, Claim 3 remains broader than Claim 4, as Claim 3 covers equivalents, and Claim 4 does not, and is therefore different. *Laitram*, 939 F.2d at 1538.

Claim 5. *A spring assembly comprising:*

a generally tubular shaped elastic material; and

a plurality of coil means, interconnected with one another in a spaced-apart relationship and disposed within said generally tubular shaped elastic material, for causing the spring assembly to exert a generally constant force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction, said force being generally constant over a range of deflection of the spring assembly along the loading direction.

Terms for Construction

Generally tubular shaped elastic material

The parties disagree as to the meaning of “generally tubular shaped.” The parties agree that tubular should have its ordinary meaning – having the form of or consisting of a tube. “Generally” is given its ordinary meaning – for the most part. The parties agree that the shape is hollow. They disagree as to the interpretation of “tube.” Defendant asserts the proper definition is an elongated cylindrical structure. Plaintiff argues that this definition is too narrow as it would not encompass all the embodiments of the patent, specifically Figs. 13, 25 and 27.

The Court rejects plaintiff’s argument that the “generally tubular” limitation of Claim 5 must be interpreted broadly enough to cover all embodiments of the patent, including the distinctly non-tubular, irregularly shaped elastic embodiments illustrated at Figs. 25 and 27. Independent Claim 1 does not include the limitation of a generally tubular shaped elastic material and encompasses the irregular shapes of Figs. 25 and 27. This is further illustrated by the fact that these irregularly shaped embodiments are more particularly covered by Claims 3 and 4, which depend from Claim 1. Similarly, the embodiment of Fig. 13, in which the elastomer is not shaped like a tube but is disposed only on one side of the coils, is covered by independent Claim 13. The plain meaning of tubular as set forth in Claim 5 will not be distorted so Claim 5 can read on embodiments properly covered by other independent claims of the patent.

The Court adopts the ordinary meaning of tube – a hollow cylindrical structure. Claims 10, 11 and 12 are dependent on Claim 5, and therefore indicate that the cylindrical structure is not limited to a round shape (as depicted in Fig. 1), but includes an oval, or elliptically-shaped tube (as depicted in Figs. 10, 11 and 12). Further the hollow of the tube is not limited to a round shape (as depicted in Figs. 1b and 10), as dependent Claims 11 and 12 cover a plurality of hollow areas and a generally rectilinear hollow center (as depicted in Figs. 11 and 12).

The Court defines **generally tubular shaped** as:

A structure that for the most part is a round, elliptical or oval cylinder, with a hollow cross-section.

A plurality of coil means, interconnected with one another in a spaced-apart relationship and disposed within said generally tubular shaped elastic material, for causing the spring assembly to exert a generally constant force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction, said force being generally constant over a range of deflection of the spring assembly along the loading direction

Claim 5 uses the word “means” for defining a plurality of coil. Both parties agree the rules of section 112(6) apply. The function of the plurality of coil means is to cause the spring assembly to exert a generally constant force in a loading direction approximately to normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction, said force being generally constant over a range of deflection of the spring assembly along the loading direction.

The language of Claim 5 includes the specific structural recitation that the means be “interconnected with one another in a spaced-apart relationship and disposed within said generally tubular shaped elastic material.” The recitation of some structure in a means-plus-function element does not preclude the applicability of section 112(6). *Laitram Corp.*, 939 F.2d at 1536.

With regard to identifying the corresponding structure for the coil means, the Court looks to the specification for the structures disposed within a generally tubular shaped elastic material and meeting this function. Figure 1 is identified as “a spring assembly ... generally showing a plurality of coil means disposed within an elastic material.” Col. 3, lines 23-26. The elastic material (18) in Figure 1 is generally tubular in shape. The plurality of coils are interconnected in a spaced-apart relationship for causing the spring assembly to exert a generally constant force in a loading direction, normal to a tangent to a centerline. Col. 4, lines 48-53. The coils are shown as circular, but could be canted coil assemblies. Col. 4, lines 60-63.

The Court finds that section 112(6) applies, modifies the parties’ joint construction of **a plurality of coil means, interconnected with one another in a spaced-apart relationship and disposed within said generally tubular shaped elastic material, for causing the spring assembly to exert a generally constant force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction, said force being generally constant over a range of deflection of the spring assembly along the loading direction**, and defines it as:

Two or more spaced-apart coils of a circular or canted coil spring, and equivalents thereof.

The parties dispute the interpretation of the phrase **disposed within** said generally tubular shaped elastic material. This phrase is a structural limitation that identifies which embodiments of the patent illustrate a plurality of coil means that come within the scope of this claim.

Plaintiff contends that **disposed within** requires that the plurality of coil means be located or positioned within the generally tubular shaped elastic, but elastic material is not necessarily disposed between the coils. Plaintiff cites to Fig. 26 as an example of an embodiment in which the coils are located within an elastic material without the material being disposed around and between the coils. Fig. 26 is a cross-section of Fig. 25. Col. 4, lines 40-41.

Fig. 25 illustrates a plurality of coils 354 within elastic material 358 thereabout. Col. 9, lines 27-30. Fig. 25 is the embodiment of Claims 3 and 4, which are dependent on Claim 1. Claim 1, which does not require a generally tubular shape for the elastic material, identifies the elastic material means (358 in Figs. 25 and 26) as disposed around and between the plurality of coil means. Therefore, Plaintiff's argument that Fig. 26 demonstrates that the language **disposed within** in Claim 5 does not require the elastic material be between the coils is misplaced.

Plaintiff also refers to the specification at Col. 2, lines 2-7, to support its argument that Fig. 26 demonstrates that **disposed within** does not require the elastic material be disposed between the coils. This portion of the specification, however, is not discussing Fig. 26, but the embodiment at Fig. 21b, in which the coil is "disposed within the elastic material in a stretched spaced-apart relationship in which case the elastic material has sufficient resistance to hold the plurality of coils in the stretched spaced-apart relationship." Col. 2, lines 2-7. Fig. 21b shows a radial spring 210 stretched and filled with elastomer material 218. Col. 8, lines 32-35. Fig. 21b illustrates the elastic material between the coils to maintain that stretched relationship. This, therefore, does not support the plaintiff's interpretation that **disposed within** should not be interpreted, as defendants argue, to mean that the coils are embedded (or imbedded) in the elastic material such that the material is disposed around and between the coils.

Fig. 15, however, is also a corresponding structure illustrating a plurality of coil means **disposed within** a tubular shaped elastic material. In this embodiment the elastomer is described as "coating both the inside and outside of the coil." Col. 6, lines 64-66. The specification does not indicate that the elastic material is around and between the coils, but rather coats the coils on the outside and inside. Fig. 15 is described as an alternative to Fig. 16, in which the elastomer is disposed along the outside and through the coils. Col. 6, lines 66-67.

Consequently, the Court concludes that, with respect to Claim 5, the corresponding structures depicting a plurality of coil means **disposed within** the tubular shaped elastic material includes structures in which the elastic material is present on the outside of the coil means, but is not necessarily through (between) the coils.

Claim 9. The spring assembly according to claim 1 or 5 further comprising means for defining an open passage through the elastic material for enabling passage of fluid therethrough.

Terms for Construction

Means for defining an open passage through the elastic material for enabling passage of fluid therethrough

Claim 9 uses the word "means" for further defining the elastic material means such that it has an open passage to allow fluid to pass through it. Both parties agree the rules of section 112(6) apply. The function of the open passage in the elastic material is for enabling the passage of fluid therethrough.

The Court looks to the specification for the corresponding structure. The shape of the elastic material embodied in Fig. 14 is specifically linked to the claimed function. Col. 6, lines 60-63 ("the embodiment 170 includes an open area 190 through the coils 178 in order to facilitate the passage of fluid.") Fig. 14 has elastic material disposed on the inside of the coil with a hollow cross-center.

The Court finds that section 112(6) applies, and **means defining an open passage through the elastic material for enabling passage of fluid therethrough** is defined as:

A space in the elastic material exposing the coils that extends to the hollow cross-center.

Claim 12. *The spring assembly according to claim 1 or 5 wherein the coil means have an oval perimeter and said elastic material includes **means for defining a generally rectilinear hollow center portion thereof.***

Terms for Construction

Means for defining a generally rectilinear hollow center portion thereof.

Claim 12 uses the word “means” for defining a shape of the hollow center portion of the elastic material. Both parties agree the rules of section 112(6) apply. The function of the means is to create a generally rectilinear hollow center in the elastic material.

The Court looks to the specification for the corresponding structure. Figure 11 depicts elastic material with a generally rectangular, hollowed cross-sectional opening. Col. 6, lines 42-45.

The Court finds that section 112(6) applies, and adopts the parties’ joint construction of **means for defining a generally rectilinear hollow center portion thereof** as:

A hollow center of the elastic material having a shape that for the most part is rectangular, and equivalents thereof.

Claim 13. *A spring assembly comprising:*

a plurality of coil means, interconnected with one another in a spaced-apart relationship, for causing the spring assembly to exert a generally constant force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring in response to deflection of the spring assembly along said loading direction; and

elastic coating means, disposed on said plurality of coil means, for modifying the magnitude of the generally constant force exerted by the plurality of coils in response to deflection of the spring assembly along said loading direction.

Terms for Construction

A plurality of coil means, interconnected with one another in a spaced-apart relationship, for causing the spring assembly to exert a generally constant force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring in response to deflection of the spring assembly along said loading direction

Claim 13 uses the word “means” for defining a plurality of coil. Both parties agree the rules of section 112(6) apply. The function of the plurality of coil means is to cause the spring assembly to exert a generally constant force in a loading direction approximately to normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring assembly along said loading direction.

The language of Claim 13 includes the specific structural recitation that the means be “interconnected with one another in a spaced-apart relationship.” The recitation of some structure in a means-plus-function element does not preclude the applicability of section 112(6). *Laitram Corp.*, 939 F.2d at 1536.

With regard to identifying the corresponding structure for the coil means, the Court looks to the specification for the structures meeting this function. Figure 1 is identified as a spring assembly with a plurality of coils interconnected in a spaced-apart relationship for causing the spring assembly to exert a generally constant force in a loading direction, normal to a tangent to a centerline. Col. 4, lines 48-53. The coils are shown as circular, but could be canted coil assemblies. Col. 4, lines 60-63.

The Court finds that section 112(6) applies, modifies the parties’ joint construction of **a plurality of coil means, interconnected with one another in a spaced-apart relationship, for causing the spring assembly to exert a generally constant force in a loading direction approximately normal to a tangent to a centerline of said plurality of coil means in response to deflection of the spring in response to deflection of the spring assembly along said loading direction**, and defines it as:

Two or more spaced-apart coils of a circular or canted coil spring, and equivalents thereof.

Elastic coating means, disposed on said plurality of coil means, for modifying the magnitude of the generally constant force exerted by the plurality of coils in response to deflection of the spring assembly along said loading direction.

Claim 13 uses the word “means” for defining elastic coating. Both parties agree the rules of section 112(6) apply. The function of the elastic coating means is for modifying the magnitude of the generally constant force exerted by the plurality of coils in response to deflection of the spring assembly along said loading direction.

The Court looks to the specification for the corresponding structure. The elastic material, or elastomer, used in the patent is described as “any synthetic or natural material capable of recovering its original size and shape after deformation. That is, the material is resilient.” Col. 6, lines 8-12. Examples of such resilient material are given at Col. 7, lines 57-62.

The Court finds that section 112(6) applies, and **elastic coating means, disposed on said plurality of coil means, for modifying the magnitude of the generally constant force exerted by the plurality of coils in response to deflection of the spring assembly along said loading direction**, is defined as:

A resilient elastic material, and equivalents thereof.

The parties dispute the interpretation of the phrase **disposed on** said plurality of coil means. The phrase is a structural limitation that identifies which elastic coating means come within the scope of this claim.

Plaintiff contends that **disposed on** requires that the elastic coating means be located or positioned on the plurality of coil means, but the elastomer is not necessarily disposed between the coils. Plaintiff again cites to Fig. 26 as support for this interpretation. For the reasons set forth above, the Court rejects plaintiff’s analysis that Fig. 26 reveals an elastic coating that is not between the coils.

Fig. 13, however, is a corresponding structure illustrating an elastic coating means, disposed on a plurality of coil means. In this embodiment the elastomer is described as “disposed on one side

170A of coils 172A.” Col. 6, lines 52-54. The specification does not indicate that the elastic material is around and between the coils, but rather disposed on one outer side, with no interior elastomer.

Consequently the Court concludes that, with respect to Claim 13, the corresponding structures depicting a elastic coating means **disposed on** said plurality of coil means includes structures in which the elastic material is present at least partially on the outside of the coil means, but is not necessarily through (between) the coils.