

United States District Court
For the Northern District of California

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E-FILED on 1/13/10

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

SCIENTIFIC SPECIALTIES INC.,

Plaintiff,

v.

THERMO FISHER SCIENTIFIC INC.,

Defendant.

No. C-08-05224 RMW

ORDER CONSTRUING CLAIMS OF
UNITED STATES PATENT NO. 5,722,553
AND GRANTING IN PART AND DENYING
IN PART DEFENDANT'S MOTION FOR
SUMMARY JUDGMENT OF NON-
INFRINGEMENT

[Re Docket Nos. 40, 42]

Scientific Specialties Inc. ("SSI") brings this suit against Thermo Fisher Scientific Inc. ("TFS") alleging infringement of United States Patent No. 5,722,553 ("553 patent"), which is directed to an integral assembly of hollow tubes and seal caps. TFS asserts counterclaims for declaratory judgment of non-infringement and invalidity. The parties seek construction of seven phrases in the '553 patent. TFS also moves for summary judgment of non-infringement. The court held a claim construction hearing and heard argument on the summary judgment motion on November 3, 2009. After consideration of the claims, specification, prosecution history, and other relevant evidence, and after hearing the arguments of the parties, the court construes the disputed

ORDER CONSTRUING CLAIMS OF UNITED STATES PATENT NO. 5,722,553 AND GRANTING IN PART AND DENYING IN PART DEFENDANT'S MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT—No. C-08-05224 RMW
LJP

1 language of the patent-in-suit and grants in part and denies in part TFS's motion for summary
2 judgment.

3 I. BACKGROUND

4 Both SSI and TFS design and manufacture plastic products, including reagent tubes, that are
5 used in scientific research. The '553 patent is directed to a strip of reagent tubes wherein each tube
6 has an independently tethered seal cap. Reagent tubes are small, about an inch long, which makes
7 them difficult to manipulate individually. '553 Patent at 3:20-30. To solve this problem, tubes are
8 connected side-by-side in a strip. *Id.* at 2:24-26, 3:20-30. The seal caps may also be connected in a
9 strip that fits on top of the tube strip. However, it is advantageous to provide each tube with an
10 independently tethered seal cap, which allows each tube to be sealed or unsealed without affecting
11 the other tubes in the strip. *Id.* at 3:29-34. The seal caps are attached at an angle to the row of tubes
12 to minimize the overall width of the assembly. *Id.* at 1:48-52.

13 The '553 patent has 18 claims. Claims 1, 15, and 17 are independent claims. For illustration,
14 claim 1 is reproduced below:

15 An integral assembly of a multiplicity of spaced reagent tubes arranged in an
16 elongated aligned series, said tubes each having an open end and a closed end, the
17 open ends of adjacent tubes integrally connected by a series of aligned tethers, and a
18 corresponding multiplicity of correspondingly spaced independent seal caps, each
19 seal cap having a tubular seal skirt portion symmetrical about a central axis and
20 adapted to selectively sealingly engage the open end of an associated reagent tube,
21 each said seal cap being independently pivotally connected integrally and angularly
22 to an associated one of said reagent tubes at an angle other than 90 degrees to the
23 elongated aligned series in which said reagent tubes are arranged and independently
24 selectively manipulable in relation to the open end of said associated reagent tube to
25 superimpose said seal cap thereover to selectively effect sealing penetration of said
26 tubular skirt portion into or out of said open end to seal or unseal the open end of said
27 associated reagent tube.

28 TFS makes and sells a line of products called ABgene EasyStrip Snap Tubes ("EasyStrip").
SSI contends that the products designated AB-1502, AB-1502/w, and AB-1504 infringe at least
claims 1, 15, and 17 of the '553 patent. All three products consist of two pieces: a reagent tube strip
and a strip of rings and caps. Declaration of Jeffrey Coulling ("Coulling Decl.") ¶ 2. Each cap is
independently connected to an associated ring, and the rings are joined by tethers. *Id.* ¶¶ 6-7. The
rings are designed to be press-fit at an upper region of the tubes. *Id.* ¶ 8. The products are different

1 in that the AB-1502 and AB-1502/w products have flat caps while the AB-1504 product has a
2 domed cap. *Id.* ¶ 2. The AB-1502 and AB-1502/w products are identical except in color. *Id.*

3 **II. ANALYSIS**

4 **A. Construction of Disputed Language**

5 Construction of a patent, including terms of art within a claim, is exclusively within the
6 province of the court. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388 (1996). In
7 determining the meaning of a disputed claim limitation, the intrinsic evidence, including the claim
8 language, written description, and prosecution history, is the most significant. *Phillips v. AWH*
9 *Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). Words of a claim "are generally given their ordinary
10 and customary meaning" as understood by a person of ordinary skill in the art. *Id.* at 1312-13.
11 Claims are read in view of the specification, which is the "single best guide to the meaning of the
12 disputed term." *Id.* at 1315. A court "should also consider the patent's prosecution history, if it is in
13 evidence." *Id.* at 1317.

14 **1. "An integral assembly of a multiplicity of spaced reagent tubes arranged**
15 **in an elongated . . . series . . . and a corresponding multiplicity of**
16 **correspondingly spaced independent seal caps" (Claims 1, 15, and 17)**

<i>SSI's Proposed Construction</i>	<i>TFS's Proposed Construction</i>
a contiguous component comprising a series of reagent tubes spaced apart . . . a series of [aligned] ¹ components where the length of the series is greater than the dimensions of the individual components . . . individually manipulable seal caps that correspond in number to the reagent tubes, the spacing of the seal caps corresponding to a spacing of the reagent tubes, the number of seal caps and reagent tubes each being more than one	a one-piece article of manufacture of a number of spaced reagent tubes arranged in an elongated series and a corresponding number of spaced independent seal caps and excludes an article of manufacture where the reagent tubes and seal caps are formed separately in two pieces and then physically joined

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28 ¹ SSI omits the word "aligned" in its proposed construction for this language as it appears in claim 15.

1 The '553 patent repeatedly refers to the claimed invention as an "integral assembly," and the
2 terms "integral" and "integrally" appear frequently in the specification and claims.² At the core of
3 many of the disputed terms is a disagreement between the parties about the meaning of the word
4 "integral." SSI contends that "integral" means (circularly) "forming a unit such as to be complete
5 and composed of integral parts" and that "integral assembly" refers to a series of individual elements
6 coming together (i.e. assembled) to function as a contiguous component (i.e. operating in an integral
7 manner). TFS contends that "integral assembly" refers to a one-piece article of manufacture.

8 Despite the terms' frequent usage, neither "integral" nor "integrally" is defined in the patent.
9 In discussing the background of the invention, the inventor states:

10 It is particularly advantageous in the handling of reagent-containing vials or tubes,
11 such as microcentrifuge tubes, that the tubes and the independently tethered caps for
12 sealing the tubes constitute a unitary assembly. Accordingly, it is one of the objects
13 of the present invention to provide a unitary assembly of multiple hollow tubes
14 integrally connected to one another and to a corresponding number of seal caps
independently tethered to an associated tube *so that the integral assembly of tubes
and caps may be handled as a unit* while enabling each of the seal caps to be
independently sealed or unsealed from the tube to which it is independently integrally
tethered.

15 '553 Patent at 1:36-47 (emphasis added). Thus, it appears that the goal of providing for an "integral
16 assembly" is to allow the apparatus to be handled as a unit. This is similar to SSI's definition of
17 "integral," but the proposed construction "contiguous component" is seemingly too broad. The
18 terms "integral" and "integrally" frequently modify words that already imply that two pieces are
19 contiguous, such as in the phrases "integrally connected," "integrally tethered," "integral
20 connection," and "merges integrally." *E.g., id.* at 1:41-42, 2:27, 2:55-56, 3:60, 3:65, 4:26. Thus,
21 "integral" and "integrally" must mean something more than "contiguous."

22 Depending on the context, courts have construed the term "integral" to broadly mean forming
23 a unit or to narrowly refer to being formed in one piece. *See, e.g., Vanguard Prods. Corp. v. Parker
24 Hannifin Corp.*, 234 F.3d 1370, 1371, 1373 (Fed. Cir. 2000) ("formed as a unit with another part");

25 ² Indeed, the words appear so frequently in some places that it is difficult to see how they are not
26 redundant or circular. *See, e.g.,* '553 Patent at 1:67 to 2:4 ("an integral 'live' hinge integrally
27 interposed in the tether . . . enabling flexible manipulation of each . . . cap . . . from an angularly
28 related integral extended condition to an integral superimposed tube-sealing condition"); *id.* at 4:56-
57 ("the thin hinge portion is integral with the remainder of the strap with which it is integrally
formed").

1 *In re Hotte*, 647 (C.C.P.A. 1973) ("sufficiently broad to embrace constructions united by such means
2 as fastening and welding"); *Am. Piledriving Equip., Inc. v. Bay Mach. Corp.*, 632 F. Supp. 2d 956,
3 965 (N.D. Cal. 2009) ("formed or cast of one piece"); *Parker-Hannifin Corp. v. Wix Filtration*
4 *Corp.*, 2008 U.S. Dist. LEXIS 24540 at *27 (E.D. Cal. Mar. 14, 2008) ("formed in a single piece").
5 TFS urges the court to follow *Parker-Hannifin*, which construed "integral" to mean "formed in a
6 single piece." The patent at issue in *Parker-Hannifin* used language such as "integral end cap
7 assembly" and "an annular flange integral with said first end cap." 2008 U.S. Dist. LEXIS 24540 at
8 *19-20. The specification stated that the flange should be molded as a single unit with the top end
9 cap. *Id.* at *22. The court held that such single-unit construction was consistent with the term
10 "integral," and "[t]here is nothing in the claims or specifications that indicate that 'integral' requires
11 more than one part." *Id.* at *22-23. Thus, like other cases that limit "integral" to a one-piece article,
12 *Parker-Hannifin* involved a patent that clearly indicated the elements should be formed in one piece.
13 While the only embodiment discussed in the '553 patent involves a one-piece article of manufacture,
14 the specification does not explicitly limit the invention to that structure, nor is it clear that "integral"
15 refers only to a single injection-molded piece as described in the preferred embodiment.

16 TFS argues that the specification uses "integral assembly" synonymously with "unitary
17 assembly" and uses "unitary" in the sense of a single structure. The only language regarding a single
18 structure is the statement, describing the preferred embodiment, that "the flexible hinge straps, the
19 integrally connected tubes, and the seal caps are all preferably formed as a *single unitary structure*
20 by injection molding from a suitable synthetic resinous material." '553 Patent at 4:30-33 (emphasis
21 added). Far from limiting either "integral" or "unitary" to a single structure, this language suggests
22 that the apparatus is *preferably* a single unitary structure but need not be. TFS's argument that
23 "preferably" modifies "injection molding" rather than "single unitary structure" is unpersuasive.
24 Although the inventor was often liberal with his use and positioning of adverbs, TFS's interpretation
25 greatly strains the rules of grammar. Moreover, the inventor earlier states that the preferred
26 embodiment "comprises a multiplicity . . . of tubes, injection molded from a suitable plastic," *id.* at
27 3:25-37, suggesting that the new preference being expressed is that of forming the entire article,
28 from tubes through seal caps, as a single structure.

1 TFS also relies on the prosecution history to argue that the invention must be a single
2 structure. During prosecution, the examiner rejected certain claims under 35 U.S.C. § 103 as being
3 unpatentable over Irwin, et al. (United States Patent No. 3,139,208) in view of Berg (United States
4 Patent No. 2,949,203). Springer Decl., Ex. F ¶ 4. Specifically, the examiner found "[i]t would have
5 been obvious to one of ordinary skill in the art to have employed the cap open position taught by
6 Berg, Fig. 2, in the construction of the device of Irwin, et. al., motivated by the ease of molding
7 such." *Id.* In response, the inventor argued:

8 the flat plate 8 of Irwin et al is integral with the tubes 6, the flat plate configuration
9 being chosen specifically to retain the associated receptacles 6 for paint materials
10 associated with one another to permit "paint by the numbers" facility to the user of
11 the assembly. Additionally, the Berg structure illustrated in FIG. 2 is a separate
12 manufacture from the container 10, and is disposed removably on the neck of the
13 container 10 for purposes of convenience. Thus, attempting to mold the injection
14 molded part of Berg as illustrated in FIG. 2 into the structure of Irwin et al, which
presumably is also injection molded, would serve no useful purpose revealed by
Irwin et al, would not be simpler or more easy, but much more complex, and certainly
therefore a logical inference cannot be deduced that the molding process and
structure resulting therefrom would be facilitated by the proposed re-design and
reconstruction. If anything it would be made more complex and difficult, therefore
teaching away from the proposed reconstruction.

15 Springer Decl., Ex. G at 14. TFS argues that this excerpt (1) uses "integral" to refer to the one-piece
16 unit in Irwin and (2) states that converting the inventor's one-piece unit of manufacture into a
17 structure with parts of separate manufacture would be teaching away from the invention. It is true
18 that Irwin describes a one-piece unit and in fact touts his invention as "lend[ing] itself to inexpensive
19 production as a unitary molding . . . by reason of the fact that the [pieces] are all formed integrally
20 with one another." Irwin at 1:21-25. However, using the word "integral" to refer to a one-piece unit
21 of manufacture does not imply that "integral" cannot also describe something else. In addition, the
22 inventor never argues that a structure with parts of separate manufacture were not contemplated by
23 his invention. He argued that there was no motivation to combine Irwin with Berg, i.e. that the
24 invention was non-obvious. This is fully consistent with an argument that the invention included
25 multi-part units. Thus, the prosecution history does not support TFS's narrow definition of
26 "integral."

27 In conclusion, the '553 patent uses "integral" to mean more than a one-piece article but less
28 than anything that is contiguous. The court finds that "integral" and "integrally" refer to pieces

1 joined in such a way as to form a single unit. Thus, the court construes the language at issue as "a
2 number of spaced reagent tubes arranged in an elongated series with a corresponding number of
3 individually manipulable seal caps, the spacing of the seal caps corresponding to the spacing of the
4 reagent tubes, all joined so as to form a unit."

5 **2. "the open ends of the adjacent tubes integrally connected by a series of**
6 **aligned tethers" (Claim 1)**

7 <i>SSI's Proposed Construction</i>	8 <i>TFS's Proposed Construction</i>
9 the components of the series are joined in 10 a contiguous manner by a series of tethers oriented in a common direction	11 adjacent tubes are connected together by tethers at their open ends (i.e., at the plane of the element 7 in Fig. 6) and excludes an assembly where the adjacent tubes are connected by tethers spaced below their open ends

12 The parties dispute two aspects of this claim language. First, the parties dispute the scope of
13 the term "integrally," which the court resolves above. Second, the parties dispute the location of the
14 tethers that connect the adjacent tubes. Under TFS's construction, the tethers must be at the open
15 ends of the tubes and the language excludes an assembly the adjacent tubes are connected by tethers
16 spaced below their open ends. At the claim construction hearing, counsel for SSI agreed that claim
17 1 requires that there be tethers at the open ends of the tubes. However, SSI argues, there is no basis
18 for excluding an assembly that *also* has tethers at other locations.

19 As SSI points out, claim 1 does not use close-ended claim language that would exclude
20 additional elements not described. In addition, claim 18 provides "[t]he integral assembly according
21 to claim 17 . . . whereby said tethers comprise the only interconnection between said reagent tubes."
22 Thus, the inventor used clear language when he required the tethers at the open ends to be the *only*
23 tethers. There is no basis for a similar limitation in claim 1. Thus, the court construes the disputed
24 language to mean "adjacent tubes are joined so as to form a unit by a series of aligned tethers that
25 attach at the plane of the open ends of each respective tube."
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3. "tether means coincident with the plane of the open ends of the multiplicity of tubes integrally interconnecting adjacent tubes, said tether means being coincident with the plane including the central axes of said multiplicity of spaced reagent tubes . . . said tether means integrally connecting the annular flanges of adjacent reagent tubes" (Claim 15)

<i>SSI's Proposed Construction</i>	<i>TFS's Proposed Construction</i>
the components of the series are joined in a contiguous manner by a series of tethers coincident with the 'open end plane'; the plane of the tether is coincident with the plane of the central axes . . . tethers connect the annular flange of adjacent tubes in a contiguous manner	adjacent tubes are connected together by tethers at their open ends (i.e., at the plane of element 7 in Fig. 6) and excludes an assembly where the adjacent tubes are connected by tethers spaced below their open ends

As above, the key portions of this disputed language are the term "integrally" and the location of the tethers relative to the open ends of the tubes. This language is clear as to the location of the tethers ("coincident with the plane of the open ends"), and as with claim 1 discussed above, there is no basis for excluding structures that have additional tethers not at the open ends. The parties agree that the language "tether means" does not invoke the means plus function provisions of 35 U.S.C. § 112, ¶ 6. Thus, the court finds that, except for the term "integrally," this language does not require construction.

4. "the open ends of adjacent tubes integrally connected directly by a series of aligned tethers" (Claim 17)

<i>SSI's Proposed Construction</i>	<i>TFS's Proposed Construction</i>
individual tubes are contiguously connected to adjacent tubes by members aligned in a common direction	adjacent tubes are connected together by tethers at their open ends (i.e., at the plane of the element 7 in Fig. 6) and excludes an assembly where the adjacent tubes are connected by tethers spaced below their open ends

This language has the same import as the language construed in Part II.A.2 above, except that it has the additional word "directly." The parties' proposed constructions do not account for this difference, i.e. they are identical to the proposed constructions above. At the claim construction hearing, counsel for TFS represented that the term "directly" does not affect the infringement analysis in this case. "[W]hile interpretations that render some portion of the claim language superfluous are disfavored, where neither the plain meaning nor the patent itself commands a

1 difference in scope between two terms, they may be construed identically." *Power Mosfet Techs.,*
 2 *LLC v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004) (finding "the addition of the term
 3 'directly' to an existing requirement of physical contact imposes no additional restrictions on the
 4 phrase"). Thus, the court construes this language to have the same meaning as the language in Part
 5 II.A.2, i.e. "adjacent tubes are joined so as to form a unit by a series of aligned tethers that attach at
 6 the plane of the open ends of each respective tube."

7 **5. "each said seal cap being independently pivotally connected integrally . . .**
 8 **to an associated one of said reagent tubes" (Claims 1 and 15)**

<i>SSI's Proposed Construction</i>	<i>TFS's Proposed Construction</i>
an individual seal cap is contiguously connected to each tube by a flexible member at an angle to the common direction of the elongated series	each seal cap is independently and pivotally connected to an associated reagent tube in a one piece construction and excludes a construction in which each seal cap is pivotally connected to a ring which is then physically connected to a reagent tube

14 As with other claim language, this dispute turns on the construction of the term "integrally."
 15 Consistent with the meaning of "integrally" as discussed above, the court construes this language to
 16 mean "each seal cap is independently and pivotally joined so as to form a unit with an associated
 17 reagent tube."

18 **6. "each said seal cap being independently pivotally directly connected**
 19 **integrally . . . to an associated one of said reagent tubes" (Claim 17)**

<i>SSI's Proposed Construction</i>	<i>TFS's Proposed Construction</i>
an individual seal cap is contiguously connected to each tube by a flexible member at an angle to the common direction of the elongated series	each seal cap is independently and pivotally connected to an associated reagent tube in a one piece construction and excludes a construction in which each seal cap is pivotally connected to a ring which is then physically connected to a reagent tube

24 This language is identical to that construed in the preceding section, except that it has the
 25 additional word "directly." As with the claim language construed in Part II.A.4 above, the parties
 26 apparently agree that the word "directly" has no import. Thus, the court construes this language to
 27 have the same meaning as the language in the preceding section.
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7. "each said seal cap including a semi-spherically domed wall portion constituting said closed end" (Claim 15)

The parties agree that this phrase should have the construction "each said seal cap has a rounded end in the shape of a semi-spherically domed wall portion and excludes a seal cap having a flat or planar closed end." Thus, the court adopts this construction.

B. TFS's Motion for Summary Judgment of Non-Infringement

To prove infringement, the patentee must show that the accused device meets each claim limitation, either literally or under the doctrine of equivalents. *Deering Precision Instruments, L.L.C. v. Vector Distrib. Sys., Inc.*, 347 F.3d 1314, 1324 (Fed. Cir. 2003). Summary judgment of non-infringement is proper when no reasonable jury could find that the accused device contains every limitation recited in the properly construed claim. *PC Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359, 1362 (Fed. Cir. 2005). SSI and TFS have stipulated that "if a claim term is not designated for construction that said element is present in the accused product(s)." Scheduling Order at 4. Thus, the non-infringement analysis reduces to whether the seven phrases construed above are present in the accused products.

1. "Integral" and "Integrally"

TFS argues that the EasyStrip products do not literally infringe any claims of the '553 patent under its proposed constructions. Specifically, TFS argues that "integral" and "integrally" refer to a one-piece article of manufacture and thus could not read on EasyStrip's two-piece design. Thus, TFS argues, EasyStrip lacks three limitations that are present in all of the independent claims: (1) an "integral assembly," (2) open ends integrally connected by tethers, and (3) seal caps integrally connected to associated reagent tubes.

Because the court rejects TFS's narrow definition of "integral," these arguments fail. A jury could find that the two pieces of the EasyStrip design are meant to join so as to form a unit and that, in their assembled form, the three limitations are present. Thus, summary judgment of non-infringement on the basis of the terms "integral" and "integrally" is denied.

III. ORDER


For the foregoing reasons, the court:

1. Grants summary judgment that the AB-1502 and AB-1502/w products do not infringe claim 15 and denies the remainder of TFS's motion for summary judgment of non-infringement; and
2. Construes the disputed claim language as follows:

CLAIM LANGUAGE	CONSTRUCTION
"An integral assembly of a multiplicity of spaced reagent tubes arranged in an elongated . . . series . . . and a corresponding multiplicity of correspondingly spaced independent seal caps"	a number of spaced reagent tubes arranged in an elongated series with a corresponding number of individually manipulable seal caps, the spacing of the seal caps corresponding to the spacing of the reagent tubes, all joined so as to form a unit
"the open ends of the adjacent tubes integrally connected by a series of aligned tethers"	adjacent tubes are joined so as to form a unit by a series of aligned tethers that attach at the plane of the open end of each respective tube
"tether means coincident with the plane of the open ends of the multiplicity of tubes integrally interconnecting adjacent tubes, said tether means being coincident with the plane including the central axes of said multiplicity of spaced reagent tubes . . . said tether means integrally connecting the annular flanges of adjacent reagent tubes"	"integrally" refers to being joined so as to form a unit; "tether means" is not in means plus function format
"the open ends of adjacent tubes integrally connected directly by a series of aligned tethers"	adjacent tubes are joined so as to form a unit by a series of aligned tethers that attach at the plane of the open end of each respective tube
"each said seal cap being independently pivotally connected integrally . . . to an associated one of said reagent tubes"	each seal cap is independently and pivotally joined so as to form a unit with an associated reagent tube
"each said seal cap being independently pivotally directly connected integrally . . . to an associated one of said reagent tubes"	each seal cap is independently and pivotally joined so as to form a unit with an associated reagent tube
"each said seal cap including a semi-spherically domed wall portion constituting said closed end"	each said seal cap has a rounded end in the shape of a semi-spherically domed wall portion and excludes a seal cap having a flat or planar closed end

3. Schedules a case management conference for February 5, 2010 at 10:30 AM.

DATED: 1/13/10



RONALD M. WHYTE
United States District Judge

