United States District Court,
E.D. Texas, Lufkin Division.

ANASCAPE, LTD,
Plaintiff.
v.
MICROSOFT CORP., and Nintendo of America, Inc,
Defendants.

Civil Action No. 9:06-CV-158

Feb. 4, 2008.

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MEMORANDUM OPINION AND ORDER CONSTRUING CLAIM TERMS OF UNITED STATES PATENT NOS. 6,222,525 ***AND*** 6,906,700-***Part II***

RON CLARK**, District Judge.**

Plaintiff Anascape, Ltd. ("Anascape") filed suit against Defendants Microsoft Corporation ("Microsoft") and Nintendo of America, Inc. ("Nintendo") and Microsoft claiming infringement of U.S. Patent Nos. 6,222,525 ("the '525 patent") and 6,906,700 ("the '700 patent"). In its Memorandum Opinion and Order of January 11, 2008, the court previously construed the first three groups of claim terms. *See* Doc. # 182. Section I, "Claim Construction Standard of Review," and Section IIA, "Patent Background and Technology," of the January 11, 2008 Order are incorporated into this Order by reference. Having carefully considered the patents, the prosecution history, the parties' briefs, and the arguments of counsel, the court now construes the remainder of the terms.

REMAINING DISPUTED TERMS IN THE '525 AND '700 PATENTS

4. "Flexible membrane sheet." Used in '525 patent**, claims 1, 5, 12 and 19;** '700 patent**, claims 1, 3, 5, 6, 9**

and 26.

On its face, this seems to be a simple term. The parties did not even discuss in their briefs the meaning of "flexible" or "sheet." Anascape states that this term means "a flexible sheet that includes sensors and/or circuitry." Microsoft and Nintendo argue that this term means "a flexible sheet which includes sensors and conductive traces." Although none of the parties addressed the issue in briefing, it is helpful to first clarify the type of material being used.

In ordinary non-maritime usage, a "sheet" connotes a generally flat material with greater length and width than depth. *See, e.g., American Heritage Dictionary* 764 (4th ed.2001). Looking to the intrinsic evidence, the parties did not dispute that "sheet," as used by itself in the patents, can refer to a "flexible membrane sensor" or to a more rigid "circuit board." '525 patent, col. 5, ll. 17-18.

In ordinary usage, "flexible" could apply to a circuit board that would bend slightly, and also to thin materials that could be repeatedly bent into many shapes. Defendants were particularly concerned that the term did not encompass an ordinary rigid circuit board, even though some common boards have a measure of flexibility and could be bent. Tr. at p. 66, ll. 4-12. It is clear from the specification that a flexible membrane sheet can be bent into a three dimensional shape fairly easily "to position the sensors in three dimensional constellations." '505 patent, col. 2, ll. 60-65; *see also* col. 5, ll. 46-50. While a rigid fiberglass panel, or even a steel plate, could be bent and shaped with the application of heat and pressure, such a construction would go far beyond any ordinary understanding of the words "flexible membrane." Nothing in the patent even hints at such a construction. Anascape agreed that it did not intend a construction that captured a common rigid circuit board Tr. at p. 71, ll. 21-p. 72, l. 1.

The parties generally agreed that the material would be something that could be repeatedly bent into a three dimensional shape and returned to its original shape, although they were concerned with the precise phrasing. *See* Tr. at pp. 68-71. The main point of dispute was whether a "flexible membrane sheet" must include at least one sensor. Anascape argues that sensors are not necessarily part of a flexible membrane sheet. It is true that, generically speaking, all flexible membrane material does not include sensors or circuits. However, the court must deal with the terms in the context of these patents and inventions.

Anascape argued at the hearing that the claim term in question is "flexible membrane sheet," which is different from "flexible membrane *sensor* sheet," as used in the specification. *See* "Abstract," 525 patent, col. 2, l. 31. Anascape analogizes to *Phillips,* where the Federal Circuit stated that the use of "steel" in "steel baffles" implied that baffles are not inherently made of steel. Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed.Cir.2005) (*en banc*), *cert. denied,* 546 U.S. 1170, 126 S.Ct. 1332, 164 L.Ed.2d 49 (2006). A dependent claim describing baffles that could deflect projectiles indicated that there could be baffles that did not. Id. at 1324-25.

As in *Phillips,* the issue is whether a person of ordinary skill in the art would understand the embodiments to define the outer limits of the claim term or merely to be exemplary in nature. *Id.* at 1323. The specifications consistently refer to "flexible membrane sensor sheets," while none of the claims use that term.

Although the disputed claim term does not include the word "sensor," the patents clearly distinguish prior art as not using flexible membranes with sensors. '525 patent, col. 2, ll. 60-64. Prior art is described as being more expensive to manufacture and less reliable, because sensors must be hand wired. '525 patent, col. 3, ll.

8-23.

All of the embodiments are described as having a "flexible membrane sensor sheet." This includes an embodiment in which conductive traces are applied to two membranes separated by a membrane with one or more holes. When pressure is applied, the traces on the two sheets come into contact, forming a "contact switch," which the specification defines as a form of "sensor." Although "formed of multiple sheets stacked upon one another, it will herein generally be referred to as a membrane sensor sheet ...." '525 patent, col. 6, ll. 24-43.

Finally, the Examiner suggested that certain claims, which were dependent on rejected independent claims, would be allowable if re-written in independent form, because the "prior art of record does not teach or suggest placing an input member movable in at least two axes and finger depressible buttons ... onto a flexible sheet." Office Action, 08/31/00, at p. 6; Def. Microsoft's Cl. Const. Br., Ex. 9 [Doc. # 94, p. 8 of 9]. In response, the applicant amended the rejected independent claims to include a "flexible membrane sheet" as a new limitation. Response To Office Action of 08/31/00, at pp. 3, 5; Def. Nintendo's Cl. Const. Br., Ex. 15 [Doc. # 96, p. 4, 6 of 14]. The fact that the applicant chose to use "flexible membrane sheet," even though the specification discloses a "flexible membrane sensor sheet," is further evidence that the applicant considered the two terms to be synonymous.

Anascape cites to the '525 patent, col. 6, ll. 3-5, which states, "hand applying of the sensors and associated electrical conductors onto the flat sheet is not outside the scope of the invention ...." Pl. Anascape's Cl. Const. Br., Part II, at p. 23 [Doc. # 89, p. 29 of 41]; Tr. at p. 73, ll. 22-74, ll. 74. To argue that this reference means that a "flexible membrane sheet," as that term is used in the patent, does not include a sensor, goes too far. The cited sentence of the specification ends by pointing out that hand application of sensors "is not as great of an advancement, for *reasons of cost and reliability,* compared to *utilizing automated manufacturing processes* that are currently in wide use." '525 patent, col. 6, ll. 5-8 (emphasis added). The reader is reminded of the advantage of automated production of flexible membrane sheets, which the specification previously touted as a substantial advantage over prior art described in U.S. Patent No. 4,555,960 (issued Dec. 3, 1985 to King). '525 patent, col. 2, ll. 60-65. Whether sensors are placed on the flexible membrane sheet by machine or by hand does not matter. The fact is that they are there.

Anascape also cites the Abstract of the '525 patent, which states that "[s]ome, most, or all of the sensors are preferably supported on a generally single plane, such as on a printed flexible membrane sensor sheet or circuit board sheet." Pl. Anascape's Cl. Const. Br. at p. 23 [Doc. # 89, p. 29 of 41]. The fact that in a preferred embodiment the sensors are supported in a plane does not, by itself, imply that the sensors are not present in other embodiments. The Abstract goes on to state that "[i]n an alternative embodiment, *sensors* and conductive traces are applied on a generally flat, flexible membrane sensor sheet, which is then bent into a three dimensional configuration ...." (emphasis added) Again, there is no way that this could be interpreted as describing flexible membrane sheets without a sensor.

In the end, it appears that Anascape's position is driven not by intrinsic evidence, but rather by an attempt to ensnare an accused device in its net of infringement: "two rigid boards connected by a piece of ribbon wire." FN1 Tr. at p. 90, ll. 10-16. The court should not construe a claim with the aim of including or excluding an accused product. Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1326-27 (Fed.Cir.2006). At the same time, it can be helpful to focus on aspects of the claims at issue in relation to an accused device. *Id.*

FN1. "Ribbon wire," more commonly referred to as "ribbon cable" is "a flat, flexible multiconductor cable, made of specially treated flexible wire." *Academic Press Dictionary of Science and Technology* 1860 (1992). This definition has remained consistent over time: *see, e.g., Wiley Electrical & Electronics Engineering Dictionary* 665 (2004) (defining "ribbon cable" as "a cable in which the conductors are arranged along the same plane, and laminated or molded into a flat flexible ribbon [the cable can be] [u]sed, for instance, to connect components within a computer.").

In the end, Anascape's argument boils down to the fact that even though every embodiment and description in the specification describes flexible membrane sensors, the claims consistently refer only to a "flexible membrane sheet," and never to a "flexible membrane sensor sheet." Generically, a flexible membrane sheet could just be a flat pliable material on which conductors, sensors, and other electronic components might or might not be placed.

Anascape recognizes that such a broad construction would mean that the ninth element of claim 1 of the '525 patent would merely refer to a nondescript, rigid circuit board with a non-functional flat piece of pliable material attached to it. '525 patent, col. 33, ll. 39-40. The same would apply to the disputed term as used in the other claims under consideration. Such a construction would make the term meaningless, so Anascape argues that the flexible membrane sheet must have sensors and/or circuitry, but need not have both. However, this construction is not supported by the specification. It also does not explain why the term was included in an amendment made in response to the Examiner's statement that the prior art did not teach placing an input member or depressible button "onto a flexible sheet."

In light of the claims, specifications, and the prosecution history, it is evident that the '525 and '700 patents claim and describe devices with a thin pliable sheet, which includes, or acts as, a sensor. The court will define this term as follows:

"Flexible membrane sheet" means "a thin, flat, non-conductive material that can be easily bent into a three dimensional shape, and which includes circuitry and one or more sensors, or circuitry that functions as one or more sensors."

5. "At least one sheet." Used in '525 patent**, claims 1, 5, 12, and 19;** ' 700 patent**, claims 1, 3, 5, 6, 8, 9, 10, 20, and 26.**

Anascape argues that this term means "one or more circuit boards, flexible membrane sheets, or rigid membrane support structures connected together." As to the use of the term in the '525 patent, Microsoft and Nintendo propose "at least one flexible membrane sheet." Microsoft urges the same construction for the '700 patent, while Nintendo does not propose a construction for this phrase in the '700 patent. The proposals submitted by the parties demonstrate their agreement that "at least one" means "one or more." The primary dispute is whether the term is limited to a "flexible membrane sheet."

Both parties propose constructions that include a "flexible membrane sheet." Looking first to the claim language, the patent states "at least one sheet comprises a flexible membrane sheet connected to a rigid circuit board sheet." '525 patent, col. 33, ll. 37-39. The prosecution history shows that the patentee narrowed the claim to require that a flexible membrane sheet must be included. Nothing in the patent or the prosecution history suggests that the term "sheet" refers *only to* a flexible membrane sheet.

At the hearing, Microsoft agreed that the term only requires *at the very least* a flexible membrane sheet. Tr. at p. 97, ll. 15-16 .FN2 As the claim already states that "at least one sheet" comprises the "flexible membrane sheet," it would be repetitive to include this limitation in the court's construction of "sheet." For the same reason, it is unnecessary to construe "at least one sheet" to include "rigid membrane support structure." Anascape agreed with the latter point at the hearing. Tr. at p. 101, ll. 4-5.

FN2. Microsoft further agrees that the U.S. Patent and Trademark Office construed this term the same way in the '700 patent. Tr. at p. 100, ll. 2-5.

Each time the term is used, the claim language of the patents-in-suit itself describes what the term means. There is no need for the court to merely repeat what is already stated in the claim itself. Other than to inform the jury that "at least one" means "one or more," the court will decline to construe this term.

6. "Said at least one sheet comprises a flexible membrane sheet connected ..." Used in '525 patent**, claims 1, 5 and 19.**

"A circuit board sheet connected to a flexible membrane sheet ." Used in ' 700 patent, claims 1, 3, 5, 6, 9 and 26.

7. "[the sensors are] connected [to][by] at least one sheet ..." Used in ' 700 patent**, claims 1, 3, 5, 6, 8, 9, 10, 20 and 26.**

"at least one sheet ... connecting ... to the sensors ." Used in '525 patent, claims 1, 5 and 12.

The disputes between the parties over these terms seem somewhat artificial. For example, claim 1 of the '525 patent uses "comprising" language, and includes as the third element "at least one sheet ...." '525 patent, col. 33, l. 16. Other terms of the claim recite that the sheet is at least "a flexible membrane sheet connected to a rigid circuit board sheet" (Col.33, ll.38-39); describe what the sheet is structurally connected to (Col.33, ll.16-21); and state that there are electrical traces on it and what the traces electrically connect (Col.33, ll.22-25). Similarly, claim 12 of the '525 patent describes an image controller "comprising" (patent parlance for "having the following and perhaps more") at least one sheet, which itself includes, at a minimum, a flexible membrane sheet. '525 patent, col. 34, ll. 28-37.

The court recognizes that the use of "at least" and "comprising" in the same claim may be a little redundant. However, in light of the court's previous construction of "flexible membrane sheet" and the parties' agreement on the meaning of "at least one," the court is unable to discern any real need to construe these terms any further.

8. "... electrically conductive traces ..." Used in '525 patent**, claims 1 and 5.**

In Claim 1, the electrically conductive traces are "located on said at least one sheet." '525 patent, col. 33, ll. 22-23. In Claim 5, the "said at least one sheet includes electrically conductive traces ...." '525 patent, col. 33, ll. 61-62. As discussed previously, as well as in the specification, "sheet" refers to either a flexible membrane sheet or to a rigid circuit board sheet.

Anascape asserts that "electrically conductive traces" are "fixed-place electrical conductors on or within a circuit board or flexible membrane." Microsoft proposes "electrically conductive circuit traces on the at least one sheet contact the sensors of both the six degrees of freedom hand operable, single input member and the finger depressible buttons." Nintendo states that "electrically conductive traces, said traces engaging the

sensors" should mean "conductive ink traces, said conductive ink traces contacting the sensors on the sheet." The primary dispute is whether the conductive traces can include one or more insulated wires.

The applicant specifically chose the word "trace." Anascape's position that a "trace" on either a flexible, or a rigid, sheet could be an insulated wire is curious. The specification does not indicate the use of wires, insulated or otherwise, on a sheet. To the contrary, using "printed conductive traces" is touted as an advantage of the present invention over U.S. patent No. 4,555,960 (King), which used wires. '525 patent, col. 2, ll. 42-66. The wires as used in inventions according to the King patent had to be hand installed and individually applied to the sensors making manufacture more expensive, while at the same time making breakage more likely. '525 patent, col. 3, ll. 1-14.

One skilled in the art would know that there are a variety of ways to place a conductive "trace" on a circuit board or flexible membrane. The specification describes using machinery for "the application of conductive trace conductors" on a non-conductive circuit board "wherein the solder or conductive material adheres to printed fluxed or non-etched areas...." *See* '525 patent, col. 6, ll. 14-20. The specification also describes printing flexible membrane sheets with conductive ink. '525 patent, col. 6, ll. 24-29.

These references in the specification are consistent with definitions in contemporaneous technical dictionaries. "Trace" is defined as "a conductive path on a *printed* circuit board." *McGraw-Hill Electronics Dictionary* 476 (6th ed.1997) (emphasis added). A "printed circuit" is defined as "a circuit in which the conducting wires are 'printed' as conductive strips on an insulating board." *IEEE Standard Dictionary of Electrical and Electronics Terms* 818 (6th Ed.1996). A "printed circuit board" is defined as "a circuit board onto which the pattern of copper foil connecting the components has been etched or printed." Id.

One skilled in the art would not think of insulated wire as an "electrical trace," nor does the specification define a "trace" to mean an "insulated wire." To the contrary, the applicant refers to "wires" as "electrical conductors," but not as "conductive traces." '525 patent, col. 2, ll. 65-67. The specification also points out that the use of "fixed place trace circuitry" eliminates "individually insulated wires ...." '525 patent, col. 5, ll. 20-25; *see also* col. 5, ll. 43-55. This clearly indicates that fixed place trace circuitry and conductive traces were considered by the applicant to be an improvement over the prior art, which used "individually insulated wires to the sensors," because they increased the reliability of the controller. '525 patent, col. 5, ll. 20-25. "Trace," therefore, cannot encompass insulated wires. Accordingly, Anascape's definition is too broad.

On the other hand, Nintendo's definition is too narrow. The specification clearly states that conductive traces may be formed by printing or etching. Accordingly, the court defines this term as follows:

"Electrically conductive traces" means "paths through which electricity will flow that are formed on a circuit board or flexible membrane by etching, printing, or the like, as opposed to insulated wires."

9. "Detectable by the user." Used in '700 patent**, claims 1, 3, 6, 9, 12, 15, 19 and 26.**

Anascape contends that this term does not need to be construed. However, should the court decide to construe it, Anascape proposes "transmitted to the user's hand." Microsoft argues that this term is indefinite.

The parties agree that "tactile feedback vibration in the controller" means vibration created by an electro-mechanical structure. Such a structure with a shaft and offset weight that creates "vibration to be felt by a

hand" or "by the hand(s)" is described in the '700 patent Abstract and at col. 5, ll. 22-29, respectively. Such a structure to "provide vibration detectable by the user through the hand ..." is another description. '700 patent, col. 2, ll. 2-6. The specification also discloses "air vibrations perceived by the user's ear ..." depicted as "[v]ibration lines **640** ... emanating outward ...." '700 patent, col. 26, ll. 15-20; Fig. 40.

Microsoft nevertheless states that the term is indefinite because it is unclear how much vibration would be required to be detectable by any user. Microsoft's argument, if accepted, would amount to all claims being indefinite simply because one user's experience differed from another's experience. For example, a claim requiring emission of visible light would be indefinite because a blind person cannot determine the bounds of the claim.FN3 The term means that vibration is *capable* of being detected, not that it must *actually* be detected in every instance. There is no indication that "detectable" has been given a special meaning or is a term of art. In everyday usage, a synonym for detectable is "perceptible." *Roget's II: The New Thesaurus* 271 (1988).

FN3. The ramifications of the breadth of this argument were not addressed by Microsoft. At the hearing Microsoft cited, both orally and in its PowerPoint presentation, to the '700 patent, col. 29, ll. 18-19. *See* Tr. at p. 116, l. 17-p. 117, l. 2. However, nothing in column 29 refers to vibration, tactile feedback, or detection by a user. Nintendo did not dispute the term. One might therefore conclude that this is a "throw-away" argument made by Microsoft to distract the court from important issues, or in the hope of inducing error.

The '700 patent and its pertinent claims describe game controllers that mechanically produce vibration perceptible to the user. The calloused hand of a lumberjack might not be as sensitive as the fingers of a surgeon, but one skilled in the art can discern what is meant by the claims. The court does not find that this term is insolubly ambiguous or indefinite. Accordingly, this term will be defined as follows:

"Detectable by the user" means "capable of being perceived by the hand or ear of a user of the controller."

10. "Navigating a viewpoint." Used in '700 patent**, claims 19 and 26.**

Anascape argues that this term does not need to be construed. If the court decides to construe the term, Anascape states that it should mean "controlling the user's point of view in 3-D graphics." Microsoft and Nintendo propose "positioning and orienting a user's view, as opposed to controlling an object." There is little, if any, difference between the parties' construction.

At the hearing, Anascape agreed that Defendants' construction without the negative limitation sufficiently defines "navigating a viewpoint." Tr. at p. 124, ll. 17-20. Defendants agreed that the controller would control the user's viewpoint, but argues that its construction would prevent an infringement argument that conflated the definition of an "object" and a "viewpoint." However, the claim language already distinguishes between controlling objects and navigating a viewpoint. *See* '700 patent, col. 37, ll. 57-58 ("the controller structured with four unidirectional sensors to allow controlling objects and navigating a viewpoint."). Nothing in the claim language or specification limits the claims to a controller that controls an object and navigates a viewpoint at the same time.

The court will define this term as follows:

"Navigating a viewpoint" means "positioning or orienting a user's view."

11. "Economical combination of elements." Used in '700 patent**, claim 32.**

Anascape states that this term does not need to be construed because the phrase is used only in the preamble of claim 32. Microsoft argues that the preamble of claim 32 serves as a limitation and that the phrase is indefinite. FN4

FN4. Claim 32 is not asserted against Nintendo.

A claim's preamble can only be considered a claim limitation when it recites limitations of the claim "necessary to give life, meaning and vitality" to the claim. Pitney Bowes, Inc. v. Hewlett-Packard, Co., 182 F.3d 1298, 1305 (Fed.Cir.1999) (internal citation omitted). On the other hand, "preambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure." Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed.Cir.2002).

Here, it is clear from the claim language and specification that the preamble phrase "economical combination of elements" is not a limitation of claim 32. The applicant did not rely on this phrase to define his invention, nor is the phrase essential to understand limitations or terms in the body of the claim. Although the specification extolls the virtue of an economical combination of elements, it does not make the cost of the elements an additional structure for the claimed controller. *See, e.g.,* '700 patent, col. 23, ll. 55-58; col. 28, ll.6-8. Moreover, deletion of the disputed phrase from the preamble of claim 32 does not affect the structural definition or operation of the controller itself. The claim body extensively defines a structurally complete invention. "[E]conomical combination of elements" is simply a laudatory term, as it had no interpretive frame of reference. The phrase merely sets forth the intended purpose of the claimed combination. There is no reason to construe this term.

CONCLUSION

The jury shall be instructed in accordance with the court's interpretations of the disputed claim terms in the '525 and the '700 patents.

So **ORDERED** and **SIGNED** this **2** day of **February, 2008.**

E.D.Tex.,2008.
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