United States District Court,
S.D. New York.

OPTICAL PRODUCTS DEVELOPMENT CORP,
Plaintiff.
v.
DIMENSIONAL MEDIA ASSOCIATES, INC,
Defendant.
Dimensional Media Associates, Inc,
Counterclaimant and Third-Party Plaintiff.
v.
Optical Products Development Corp., OPD Corp., Kenneth Westort and Douglas Robinson,
Counterclaim Defendants and Third Party Defendants.

No. 00 Civ. 1714(JSR)

March 9, 2001.

Competitor sued owner of patents for visual display apparatus, seeking declarations of invalidity and noninfringement. The District Court, Rakoff, J., held that: (1) "image source" called for in patent meant video monitors, projectors, and other devices specially capable of generating screen-borne images; (2) "differential light transmissivity" attributed to beam splitter called for in patent referred to claimed ability of beam splitter to reflect light striking it from one source while transmitting light striking it from another source; and (3) patent was invalid as obvious.

Judgment for plaintiff.

5,552,934, 5,886,818. Invalid.

Theodore Araujo, Syrause, NY, for plaintiff.

Robert Gilbert, New York City, for defendant.

MEMORANDUM ORDER

RAKOFF**, District Judge.**

Plaintiff Optical Products Development Corp. ("OPD") commenced this action against defendant Dimensional Media Associates, Inc. ("DMA"), seeking a declaratory judgment that OPD was not infringing four patents assigned to DMA and that the patents were invalid. The four United States patents in issue bear numbers 5,886,818 (the " '818 Patent"), 5,552,934 (the " "4 Patent"), 5,311,357 (the " '357 Patent"), and 4,802,750 (the " '750 Patent"). DMA responded with counterclaims and a third-party complaint, alleging,

inter alia, infringement of the aforementioned patents by OPD and by its principals, Kenneth Westort and Douglas Robinson. *See* Answer, Counterclaims & Third Party Complaint, para.para. 28-31. Additionally, DMA alleged various other, non-patent counterclaims against OPD.

On September 28-29, 2000, the Court conducted a " *Markman* hearing" to address issues of patent claim construction. *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). On October 19, 2000, the Court issued an Order advising counsel that, on the basis of the *Markman* hearing, it would construe the contested claims of the '357, '750, and '818 Patents essentially in accordance with the interpretations proposed by DMA, and construe the contested claims of the "4 Patent essentially in accordance with the interpretation proposed by OPD.

Thereafter, following the close of discovery, OPD moved for summary judgment, seeking to invalidate all four patents-in-suit on various grounds. Subsequently, however, DMA submitted binding declarations that it would no longer seek to sue OPD and the third-party defendants, now or in the future, for any supposed infringement of the '357 and '750 Patents based on products currently manufactured or sold by OPD. Given these declarations, DMA also moved for, and was granted, dismissal of OPD's now-mooted claims regarding these two patents. *See* Order, November 13, 2000; *see also* Super Sack Mfg. Corp. v. Chase Packaging Corp., 57 F.3d 1054 (Fed.Cir.1995). Additionally, on the basis of the Court's *Markman* hearing decisions, the parties stipulated to the award of summary judgment in OPD's favor invalidating the "4 Patent pursuant to 35 U.S.C. s. 112 and to the dismissal of DMA's infringement claims under the "4 Patent, subject, however, to DMA's right to appeal the Court's construction of that patent and to revive its claims regarding that patent if the Court of Appeals reversed this Court's construction. *See* Stipulation and Order, November 15, 2000.

Finally, on January 29, 2001, the Court informed the parties via telephonic conference that it would grant OPD's motion for summary judgment on the last remaining patent-in-suit, the '818 Patent. After receiving this advice, the parties stipulated to the dismissal of DMA's remaining non-patent claims. *See* Stipulation and Order, March 7, 2001.

The net results of the foregoing are that all of the claims in this case have now been disposed of and that the only issues preserved for appeal are (1) the Court's construction of the '818 Patent, (2) the Court's construction of the "4 Patent, and (3) the Court's invalidation of the '818 Patent. This Memorandum will therefore elaborate the reasoning for the Court's determinations on these three issues and then close the case in this Court, so that any appeal may be pursued.

[1] (1) *Claim Construction of* the '818 Patent. The overall device patented by DMA is covered by the '818 Patent. Claim One of the '818 Patent reads as follows:

1. A visual display apparatus comprising

a visual staging station defining a space for viewing images from a vantage point along the viewing axis,

a beam splitter located along the viewing axis in said space, the beam splitter having a front side partially facing the vantage point, and back side opposite from the front side, wherein the beam splitter is oriented obliquely relative to the viewing axis,

a first image source equipped and positioned to display a first image directed toward the front side of the

beam splitter so that, to a person viewing the staging station from the vantage point, the first image appears to be a background image located behind the beam splitter substantially along the viewing axis.

a second image source equipped and positioned to display a second image directed along the a path leading toward and through the backside of the beam splitter along the viewing axis toward the vantage point, and

an optical structure located along the path between the second image source and the beam splitter, wherein the optical structure causes divergent rays from the second image to converge substantially along the viewing axis in front of the beam splitter, so that, to a person viewing the staging station from the vantage point, the second image appears as a floating real image in front of both the beam splitter and the background image.

'818 Patent Specifications, Cols. 17-18. The central interpretative dispute over this patent concerns the scope of the term "image source." DMA argues that this term, as used in Claim One and elsewhere in the specifications of the '818 Patent, means video monitors, projectors, and other devices specially capable of generating an image, while OPD suggests that any object can serve as an "image source."

In order to resolve this dispute it is useful to first establish what terms are not contested. Both sides agree that the '818 Patent uses the term "image" to mean "[a] reproduction of an object produced by light rays." 4 *Photonics Dictionary,* at D-68 (2000). *See* Declaration of Jonathan T. Kaplan ("DMA Exhibits"), Ex. R. *See also* Memorandum of Law of Dimensional Media Associates, Inc. in Support of Its Claim Construction ("DMA Mem."), at 11; OPD's Reply to DMA's Brief in Support of Its Claim Construction ("OPD's Reply Mem."), at 3-4. The *Photonics Dictionary* continues that "[a]n image-forming optical system gathers a beam of light diverging from an object point and transforms it into a beam that converges toward or diverges from another point, thus producing an image." 4 *Photonics Dictionary,* at D-68. The parties also agree that where the term "real image" is used it denotes the image formed by the convergence of beams of light through the operation of an "image forming device." *See* DMA Mem., at 11; OPD Reply Mem., at 4. Similarly, both DMA and OPD adopt the definition of "virtual image" established by the *Photonics Dictionary:* Where an image forming device "gathers" a beam of light that diverges from an object and "transforms it" into a beam that "diverges from another point," a "virtual image is produced at its apparent source." 4 *Photonics Dictionary,* at D-68. *See* DMA Mem., at 11; OPD Reply Mem., at 4. In other words, a "virtual image" is like the image formed in a mirror, where the real object that is the source of the image appears to be located at a point "behind" the mirror's surface, from which the light beams of that object appear to diverge. *See* transcript, Sept. 28, 2000, at 9-10.

[2] [3] With these commonly agreed definitions in mind, we turn to the term "image source." There is no dispute that, as a general matter, "real objects"-those three dimensional solids we encounter in consensual reality-may serve as "image sources" for an image-forming optical system. *See* id. at 33. An apple placed before a mirror gives rise to a virtual image, and thus, in one sense, may be considered an "image source." But this is not how the term "image source" is used in the claims of the '818 Patent; and it is axiomatic that proper claim construction begins, and frequently ends, with the claim language itself. *See, e.g.,* Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed.Cir.1998); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). Furthermore, it is well-established that "a patentee is free to be his or her own lexicographer," provided the selected definition is made apparent in the patent specifications. Hormone Research Foundation, Inc. v. Genentech, Inc., 904 F.2d 1558, 1563 (Fed.Cir.1990).

Claim One of the '818 Patent states that both the first and second image sources are "equipped and

positioned to display" either a first or second image, which is then directed toward either the front or back of the beam splitter. Thus, only those "real objects" that are capable of generating images themselves may serve as "image sources" in the '818 Patent, for it is obvious that "real objects" like apples or baseballs do not generate or "display" images. As noted above, both sides agree that "images" are "reproductions" of objects, not the objects themselves.

While video monitors or projectors are certainly "real objects," they are distinguished by their specific ability to generate images-what the '818 Patent defines as "screen-borne images" or "projection-based images as from a film-projector, a slide projector, [or] a video unit." *See* Detailed Description of the Invention, '818 Patent Specifications, Col. 7, Lines 24-25. Claim Nine, for example, explains that "the second image source is provided with a data stream containing three-dimensional image cues" from which it generates images. It is devices like video monitors and projectors that are so supplied with "data streams," from which they create "screen-borne" images.

Accordingly, the Court interprets the claim term "image source" in Patent '818 as denoting a device, such as a video monitor or projector, that can generate screen-borne images.

[4] (2) *Claim Construction of* the "4 Patent. One part of the '818 device, namely, the "real image projecting system" built around the "beam splitter," is covered by the "4 Patent. Claim One of the "4 Patent states:

1. In a real image projecting system including a concave mirror for reflecting a virtual image of an object and an aperture through which is projected a real image of the object into space, a beam splitter interposed the mirror and the aperture comprising:

a planar expanse having a front surface facing the aperture and rear surface facing the mirror, the plane of said expanse being oriented at an angle to an axis defined between the mirror and the aperture;

said expanse having differential light transmissivity in either direction along the axis characterized by relatively high transmissivity of light incident thereon from the mirror and relatively low transmissivity of light incident thereon from the aperture, thereby reducing reflected external object image visibility that would clutter the view of such a projected real image.

"4 Patent Specifications, Col. 6, Lines 24-38. The key dispute here centers on the meaning of "differential light transmissivity." OPD argues that this term should be interpreted as referring to a special effect achieved by use of the beam splitter to enable more light to pass through it from the mirror than from the aperture. DMA argues, by contrast, that "differential light transmissivity" describes an effect produced by the functioning of the image-projecting system as a whole, rather than a special property of the beam splitter alone. According to DMA, the image-projecting system described by the "4 Patent simply exploits the fact that light passing through the beam splitter twice-first on its way from the aperture to the mirror and then back from the mirror to the aperture-will be more attenuated than light only passing through once, thus decreasing the visual clutter around the projected image. In other words, OPD says that the "4 Patent describes a system in which the beam splitter causes the differential in light transmissivity, whereas DMA says it describes a system that takes advantage of a naturally occurring differential in light transmissivity.

In the broader perspective of this litigation, it is hard to see the practical significance of this somewhat semantic debate. If OPD's interpretation is correct, then its own products do not infringe the "4 Patent since they do not include a beam splitter that causes this special effect. But if DMA's interpretation is correct, the

ultimate result is likely the same, for the "4 Patent very likely then suffers from the same defect of "obviousness" that invalidates the '818 Patent, *see* infra.

Given the subsequent stipulations of the parties, however, the only issue the Court has been called upon to determine regarding the "4 Patent is the issue of claim construction. And as to that issue, it is clear that, whatever DMA may have meant to say about the beam splitter, what is actually described by the "4 Patent is a beam splitter that causes the differential in light transmissivity. Thus, the plain language of Claim One states that it is the "expanse" of the beam splitter, rather than the entire image-projecting system, which has the characteristic of "differential light transmissivity." FN1 So, too, the "Background of the Invention," Col. 1, Lines 13-22, describes the beam splitter as having "unique directionally differential transmissive properties." Likewise, the "Summary of the Invention" recites that it is the

FN1. Similarly, subordinate claims Two through Six repeatedly use the term "expanse" to refer to the beam splitter, rather than the overall system.

principal object of the invention to provide, in an image projecting system including an image projecting concave mirror and an aperture, an *improved* plano-beam splitter by the use of which the virtual images of objects external to the system's enclosure do not superimpose on the real image projected through the aperture into a space external to the enclosure.
Col. 1, Lines 25-31 (emphasis added). The clear focus of the "4 Patent is thus on the specific "improvement" of the beam splitter, rather than on some known property of light that the system exploits, and this "improvement" is the beam splitter's "differential light transmissivity."
Conversely, there is no mention in the patent specifications of the relatively greater attenuation of light from external objects reflected off the mirror within the enclosure. In fact, the specifications claim that the beam splitter's relative absorption and reflectivity vis-a-vis this external light can be increased to such an extent that "most light entering [the] aperture ... fails to reach the concave mirror." Col. 6, Lines 4-7.

Accordingly, the Court interprets the term "differential light transmissivity" in the "4 Patent to mean the claimed ability of the beam splitter to "reflect[ ] light entering the aperture and striking the outer surface of the beam splitter, while transmitting therethrough light that is projected from the concave mirror toward the aperture." Col. 2, Lines 2-5. While, as DMA now asserts, its beam splitter does not actually do this, OPD had a right to rely on the language of the "4 Patent in developing what it therefore could reasonably believe was a product that did not infringe that patent.

[5] (3) *Invalidity of* the '818 Patent. Regardless of claim construction, the fact that, as DMA concedes, its beam splitter simply exploits a naturally occurring differential in light transmissivity may be relevant to OPD's motion for summary judgment, by which OPD seeks to invalidate the '818 Patent on the grounds, *inter alia,* of "obviousness." *See* 35 U.S.C. s. 103. This is because such a motion encompasses a wider purview than mere interpretation of the language of the claim. Specifically, under the test established by Graham v. John Deere Co., 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966) and as later interpreted by the Federal Circuit Court of Appeals, a court evaluating obviousness should review the scope and content of the prior art, the level of ordinary skill in the pertinent art, the differences between the claim(s) of the patent in suit and the prior art, and the existence of objective criteria of nonobviousness. *See* Graham, 383 U.S. at 17-18, 86 S.Ct. 684; Ruiz v. A.B. Chance Co., 234 F.3d 654, 662 (Fed.Cir.2000).

As described above, the '818 Patent concerns a visual display apparatus using optical structures to create a

composite image made up of background and foreground images. The scope of the prior art therefore includes all art that "is reasonably pertinent to the particular problem with which the invention [is] involved," *see* Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535 (Fed.Cir.1983), here, the composite display of background and foreground images using optical structures such as lenses, mirrors, beam splitters, and the like. It is enough for present purposes, however, to focus, so far as the "prior art" is concerned, on three patents, specifically, U.S. Patent Nos. 3,443,858 (the " '858 Patent"), 4,093,347 (the " '347 Patent"), and Swiss Patent No. CH 679,342 A5 ("the Swiss '342 Patent").

[6] [7] In regards to the relevant "level of ordinary skill in the art," DMA argues that OPD has failed to offer a precise definition of this level of skill, and therefore, as a threshold matter, summary judgment is inappropriate. Indeed, experts for OPD offer conflicting descriptions, defining the level of ordinary skill variously as (1) "a B.S. degree in Optics or in Physics, and approximately 2 years of experience working with image-forming elements or with image-projection devices," Expert Report of Alexander Gaeta, DMA Exhibits, Ex. L, at para. 6; (2) "an education in basic optics or optometry and approximately 3 years of experience working with an optician or in the assembly of optics," Expert Report of Joseph A. La Russa, DMA Exhibits, Ex. N, at para. 6; or (3) "four-year science degree, and then ten years work experience in a related field," Expert Report of Kenneth Westort, DMA Exhibits, Ex. P, at para. 6. But while it is true that OPD's definitions are inconsistent, it is also true that the hypothetical person of ordinary skill in the art is presumed, as a matter of law, to know of all prior art references in the same or analogous fields, regardless of his or her specific level of educational or vocational training. *See* In re Gorman, 933 F.2d 982, 986 (Fed.Cir.1991). Even assuming the lowest level of ordinary skill advanced by OPD's experts, the Court finds that there is no genuine factual dispute that the claims of the '818 Patent would have been obvious in light of the teachings of the prior art.

In its "Description of the Drawings" section, the '818 Patent states that Figure 23 of the specifications "illustrates another form of the invention which includes a real-image projector in the form of a single-element spherical mirror, and a cooperating plano-beam splitter, both of which work together to create a composite image including a foreground-projected real imageand a background virtual image." '818 Patent Specifications, Col. 6, Lines 3-8. Further on, in the "Detailed Description of the Invention" section, Figure 23 is identified as an "organization that embodies the key features of the present invention." Col. 13, Lines 56-57. Figure 23, however, is identical to the figure used in the Swiss '342 Patent to represent the claims of that earlier invention. Even crediting DMA's various arguments as to why this striking identity should not be considered conclusive evidence of anticipation under 35 U.S.C. s. 102, *see* DMA's Surreply in Further Opposition to OPD's Motion for Summary Judgment, at 1-4, it is nevertheless highly relevant to the "obviousness" inquiry.

The differences, if any, between the claims of the '818 Patent and the Swiss '342 Patent are that, in the former, the image sources are video monitors and projectors rather than simply "real objects," and these devices are fed with "data stream[s]" that contain three-dimensional "image cues," thus imparting added realism to the images displayed and allowing the user to "interact" with the foreground real image. *See* '818 Patent Specifications, Claims 9-10, Col. 18, Lines 39-50; Declaration of Robert E. Fischer in Opposition to OPD's Motion for Summary Judgment, para.para. 35-39; Amended DMA's Local Rule 56.1 Statement of Disputed Material Facts in Opposition to OPD's Motion for Summary Judgment, para.para. 23-27. The prior art, however, discloses the use of television monitors or projectors as image sources in devices employing obliquely positioned beam splitters to create the composite display of "background" and "foreground" images, and teaches the benefits of supplying these image sources with data that include three-dimensional image cues.

In the specifications for the '347 Patent, which concerns a visual display apparatus useful in military training for simulations of in-flight refueling operations, Figure 1 and its corresponding explanation indicate that television or film projectors are used as image sources for "background" and "foreground" images composed by a beam splitter. *See* '347 Patent Specifications, Cols. 3-4. The "background" images are described as images of "terrain/sky" and are produced by a "television projector or by a cine film loop projector." Col. 4, Lines 12-15. The "foreground" image is "produced by a closed circuit television projector ... whose input is a fully gimballed [*i.e.* stabilized] model of the refueling aircraft which is controlled by an external computer or control mechanism." Col. 4, Lines 16-21. The specifications for the '858 Patent also clearly indicate the use of monitors or projectors as sources of background imagery. *See* '858 Patent Specifications, Figs. 4, 5; Col. 4, Lines 42-52, 60-70.

In short, the prior art references are strikingly similar to the essential elements of '818 Patent. To be sure, a finding of "obviousness" requires more than a simple recitation of prior art references, that, taken together, are substantially similar to the claims of the patent-in-suit. What is also needed is some "motivation to combine the prior art references" in order to arrive at the claimed invention-a motivation that " 'may flow from the prior references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved.' " Gabrielidis v. Prince Sports Group, Inc., 2000 WL 1648134, at (Fed.Cir. Nov.1, 2000) (quoting Brown & Williamson Tobacco Corp. v. Philip Morris, Inc., 229 F.3d 1120, 2000 WL 1528923 (Fed.Cir. Oct.17, 2000)). Here, however, the motivation both to use electronic devices such as monitors or projectors as image sources and to furnish the images so created with "three-dimensional image cues" is found in the teaching of the prior art itself and in the fact that such increased realism would necessarily be desirable in such visual display systems designed to simulate "real objects."

Thus, the '347 Patent teaches that realism may be enhanced by the use of television monitors or projectors that allow the image produced to respond dynamically to actions of the user. As noted above, the specifications for the '347 Patent explain that, when the invention is applied to flight simulation, the "input" for the television projector that creates the "foreground" image of a plane is a computer or manually-controlled, three-dimensional model of the refueling aircraft. *See* '347 Patent Specifications, Col. 4, Lines 16-21. This "receiver aircraft image can be controlled to simulate realistically the real-life inflight fueling situation," Col. 4, Lines 46-47, primarily through pitch and heading controls to adjust the position of the model itself and through controls that allow the image source (*i.e.,* the television projector) to move closer or farther from the optical structure, thus increasing or decreasing the apparent distance of the aircraft in relation to the observer. *See* Col. 4, Lines 28-30, 33-39. Indeed, the emphasis throughout the specifications of '347 Patent is on the ability of the claimed invention to create realistic interactions between the user and the two-dimensional image through the use of three-dimensional image cues such as "parallax" and "relative distance." *See, e.g.,* Col. 5, 23-28; Col. 6, Lines 29-36. Thus the relevant prior art for the '818 Patent teaches not only the use of monitors or projectors as image sources in visual display devices that present composite background and foreground images, but also the desirability of doing so, in that the two-dimensional "screen-borne" images displayed by such monitors or projectors can be made to respond dynamically to the inputs of the user and be supplied with three-dimensional image cues, thus increasing the realism of the simulation.

As opposed to all the above, the record does not disclose any objective indicia of non-obviousness. Accordingly, in light of the clear teachings of the prior art, the Court concludes that it is beyond genuine dispute that it would have been obvious to one possessed of the ordinary level of skill in the art to combine the prior art references-replacing the images-sources of the Swiss '342 Patent with monitors or projectors

and supplying these monitors or projectors with interactive, three-dimensional images as in the '347 Patent- to arrive at the claims of the '818 Patent.

Therefore, pursuant to 35 U.S.C. s. 103, the Court grants summary judgment to OPD on its request for a declaration holding the '818 Patent invalid, and dismisses DMA's counterclaims and third-party action for infringement of the '818 Patent as moot. All other claims having now been dismissed on consent, either with prejudice or, in the case of DMA's claims regarding the "4 Patent, subject to appeal, the Clerk of the Court is directed to enter judgment closing the case.

SO ORDERED.

S.D.N.Y.,2001.
Optical Products Development Corp. v. Dimensional Media Associates, Inc.