

The opinion in support of the decision being entered today is
not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN W. ROBERTS and NICHOLAS GUTTENBERG

Appeal 2007-0802
Application 10/317,930
Technology Center 2600

Decided: July 23, 2007

Before JAMES D. THOMAS, HOWARD B. BLANKENSHIP, and
MAHSHID D. SAADAT, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1-20, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants have invented a tactile graphic display apparatus including a display array having pressure responsive stimulus points capable of delivering different pressure variable stimulus at a selected body location of a user for simulating a virtual tactile display (Specification 9). The stimulus points are activated to make up a particular pattern which, in turn, is caused to move across the surface of the skin by selective activation and deactivation of the specific stimulus points in the array (Specification 16).

Claims 1 and 14, which are representative of the claims on appeal, read as follows:

1. A refreshable scanning tactile graphic display apparatus for localized sensory stimulation comprising:

a high density array of fluid activated stimulus points each capable of delivering different pressure variable stimulus at a selected body location of a user;

means for applying activation energy from an energy source to said stimulus points;

a microvalve array for selective activation including pressure variation of said stimulus points utilizing said means for applying activation energy; and

a control unit for controlling operation of said microvalve array.

14. A method for localized sensory stimulation to tactiley simulate a virtual display comprising the steps of:

providing for delivery of stimulus at a high density set of points at a selected body location of a user;

modulating said stimulus delivery at different said points for selective actuation including applying variable differential pressure stimulus at said points; and

controlling said modulation responsive to selected input to control which portion of the virtual display should be tactiley simulated at said points to simulate sensation of lateral motion across the selected body location thereby to communicate to the user a detailed impression of either movement of a patterned surface across the selected body location or movement of the selected body location across the patterned surface without relative movement between said set of points and the selected body location of the user.

The prior art references relied upon by the Examiner in rejecting the claims on appeal are:

Lake	US 2002/0080111 A1	Jun. 27, 2002
Kravtsov	US 6,462,840 B1	Oct. 8, 2002
Sharder	US 6,639,582 B1	Oct. 23, 2003 (filed Aug. 10, 2000)

The Examiner rejected claims 1-3 and 5-19 under 35 U.S.C. § 103(a) based upon the teachings of Sharder and Lake.

The Examiner rejected claims 4 and 20 under 35 U.S.C. § 103(a) based upon the teachings of Sharder, Lake, and Kravtsov.

Rather than reiterate the opposing arguments, reference is made to the Briefs and the Answer for the respective positions of Appellants and the Examiner.

We affirm-in-part.

ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a). Appellants focus on Sharter's combination of haptic effects developed at different locations in a network and allege that the Examiner has not shown that such display mechanism relates to a virtual display or a scanning tactile display simulating sensation of lateral motion across a selected body location over a tactile display (Br. 15). The issue turns on whether the combination of Sharter with Lake teaches or suggests the claimed subject matter related to a tactile display, as recited in claim 1.

FINDINGS OF FACT

1. Sharter describes a system for transmitting data related to haptic sensory-motor effects wherein a matrix of moveable rods interact with a user as the user touches the rods and moves them (col. 2, ll. 37-42).
2. Sharter describes the computer system for selective activation of the matrix elements (col. 3, ll. 51-66) while the elements for monitoring the haptic sensory effect are described as a touchpad of matrix rods that are moveable within a substrate (col. 4, ll. 12-23).
3. Sharter includes a feedback mechanism for transmitting the haptic effect from one terminal to another which, in effect, uses the information from the user input from one terminal as the data values to be transmitted to the other terminal and to be applied to

the matrix elements in the haptic sensory display device of that terminal (col. 5, ll. 11-29).

4. Lake discloses various haptic elements to be used in a matrix for inputting or outputting sensory data (¶ 0016).
5. Lake describes different mechanisms for each element such as a piston activated by a fluid or an element activated by hydraulics or magnetic field (¶¶ 0018 and 0019). The fluid applied to the stimulus is further defined as any material that exhibits a change of volume or sensitivity to temperature (*id.*).
6. Lake teaches that the haptic element may further be configured as a pad that is sensitive to pressure
7. Lake further discloses that the haptic sensory matrix may have any two- or three-dimensional form such as a glove or a ball that the user may hold or wear to input or read the haptic sensory data (¶0027).

PRINCIPLES OF LAW

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. *See In re Kahn*, 441 F.3d 977, 987-988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), *In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which

one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

In identifying a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art teachings, the Examiner must show some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

ANALYSIS

A. *Claim rejection based on Sharter and Lake*

The Examiner correctly characterizes Sharter's system as the claimed display apparatus since the sensory data generated at one device is transmitted to the other device for activating the matrix elements to represent the haptic sensory effect contained in the data (Answer 3-4). We disagree with Appellants' argument that the Examiner erred in rejecting the claims since Sharter fails to teach a scanning tactile apparatus which has the ability to recreate the sensory perception of passage of a user's body part over a tactile display (Br. 14-15; Reply Br. 4-5). The Examiner's failure to point to any teachings in the applied references related to such "scanning" notwithstanding, the term "scanning" merely appears in the preamble of claims 1 and 8 without relating to any specific limitations in the claims. "[A] claim preamble has the import that the claim as a whole suggests for it." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). Where a patentee uses the claim preamble to recite structural limitations of his

claimed invention, the PTO and courts give effect to that usage. *See id.*; *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989). Conversely, where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation. *See Bell Communications*, 55 F.3d at 620; *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Here, claims 1 and 8 define structurally complete inventions that require no “scanning” or movement of the displayed pattern for creating the sensory perception of passage of a user’s body part over a tactile display.

Additionally, we find the Examiner’s position with respect to reading the recited microvalves on the matrix elements of Lake to be reasonable since each element is actuated by the flow of a fluid in response to pressure, temperature or electric field through an opening or valve. In particular, the touchpad that is sensitive to pressure directs the pressure to the pad through an opening for each matrix element.

We further agree with the Examiner’s rationale for combining Sharter with Lake to apply the fluid activated stimulus of Lake to the haptic sensory-motor effect display of Sharter. As such, any of the actuation methods of Lake may be used for converting the received haptic data and creating a sensory effect display, as taught by Sharter.

Therefore, to the extent claimed, the combination of Sharter and Lake suggests the subject matter recited in claims 1 and 8. Claim 14, on the other hand, recites controlling the activation of the stimulus points to simulate sensation of lateral motion across the user’s body without the actual

movement of the display in relation to the body, which is absent in Sharter's disclosure.

With respect to claim 10, we note that the Examiner relies on each of the stimulus points as the membrane that contacts the localized area of the user's body (Answer 7 & 12). Although the claim does not specify whether a single membrane covers all the stimulus points or each point may have a separate membrane, the claim does not exclude an environment wherein a plurality of membranes are each held over a fluid opening at each stimulus point, as argued by the Examiner. The great breadth of the claim notwithstanding, the prior art does describe the haptic display as a touchpad sensitive to pressure wherein the matrix elements convert the received sensory data to produce a tactile graphic display.

B. Claim rejection based on Sharter, Lake and Kravtsov

With respect to the rejection of claims 4 and 20, we also disagree with Appellants that Kravtsov lacks a teaching related to the claimed density of the stimulus points. Kravtsov describes the spacing in terms of the separation of each point in relationship with the resolution of the generated display signal (col. 7, ll. 39-44) which reasonably defines a resolution of one rod per 0.5 mm.

Thus, based on our analysis above, we find that one of ordinary skill in the art would have found the Examiner's reliance on the combination of Sharter, Lake and Kravtsov to be reasonable in rendering the subject matter of claim 4 obvious.

CONCLUSION

On the record before us, Appellants have failed to show that the Examiner erred in rejecting the claims or the rejections are not supported by a legally sufficient basis for holding that the combined teachings of the references would have suggested to the skilled artisan all of the claimed limitations. Accordingly, based on the teachings of the prior art outlined *supra*, we agree with the Examiner's position that the claimed tactile graphic display is taught by the combination of the references and sustain the rejection of claims 1-3 and 5-13 under § 103(a) over the combination of Sharter and Lake and of claim 4 over the combination of Sharter, Lake and Kravtsov. However, we reach the opposite conclusion with respect to the rejection of claims 14-20.

DECISION

The decision of the Examiner rejecting claims 1-13 under 35 U.S.C. § 103 is affirmed but is reversed with respect to claims 14-20.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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