

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL WILLEM ELISABETH SCHOBEN
and RONALDUS MARIA AARTS

Appeal 2007-3340
Application 10/261,891¹
Technology Center 2600

Decided: May 9, 2008

Before MAHSHID D. SAADAT, SCOTT R. BOALICK, and MARC S.
HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of claims 1-15. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Appellants' invention relates to canceling the contribution of 'unwanted' signals from at least one external sound source and processing

¹ Application filed September 30, 2002. The real party in interest is Koninklijke Philips Electronics N.V.

‘wanted’ signals being delivered to headphones. An unwanted sound signal or noise cancellation system for headphones is combined with a wanted sound signal simulation system for headphones (Spec. 1).

Claims 1 and 7 are exemplary:

1. Method for reproducing sound signals by means of headphones provided with microphones wherein unwanted sound signals from at least one external sound source are compensated by sound signals, simulating in anti-phase the sound signals from said at least one external sound source, said method comprising the steps of:
 - receiving audio input signals of the at least one external sound source;
 - first filtering said received audio input signal to form anti-phase sound signals, said first filtering being controlled by resulting signals from said microphones;
 - applying said anti-phase sound signals to the headphones
 - receiving further audio input signals representing wanted sound signals;
 - second filtering said further audio input signals, said second filtering also being control by the resulting signals from said microphones; and
 - applying said filtered further audio input signals to the headphones, wherein transfer functions of said first filtering correspond to transfer function of said second filtering.

7. A sound reproducing system wherein unwanted sound signals from at least one external sound source are compensated by sound signals, simulating in anti-phase the sound signals from said at least one external sound source, said sound reproducing system comprising:
 - headphones having sound generating means and microphones; and
 - control means, the control means comprising:
 - first input means for inputting unwanted audio input signals as applied to said at least one external sound source;
 - a first filter device couple to said first input means for generating anti-phase sound signals, an output of said first filter device being coupled to said sound generating means of said headphones;
 - second input means for inputting further audio input signals corresponding to desired sound signals;

a second filter device coupled to said second input means for generating sound signals simulating said at least one external sound source; and

regulating means coupled to said microphones for generating control signals for controlling transfer functions of said first and second filter devices,

wherein said first filter device controls the sounds generated by said sound generating means to simulate, in anti-phase, said at least one external sound source in response to the unwanted audio input signal as applied to said at least one external sound source,

wherein said second filter device controls the sounds generated by said sound generating means to simulate said at least one external sound source in response to said further audio input signals corresponding to the desired sound signals, respectively,

and wherein said regulating means regulates said first and second filter device such that signals supplied by the microphones and fed to the control means are minimized.

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

Pless	US 3,862,379	Jan. 21, 1975
Eatwell	US 5,481,615	Jan. 2, 1996
Cheng	US 2003/038111 A1	Jul. 24, 2003

Claims 1-4 and 7-15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Eatwell.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Eatwell in view of Cheng.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Eatwell in view of Pless.

Appellants contend, *inter alia*, that Eatwell does not teach “receiving audio input signals of the at least one external sound source” (claim 1), “first

input means for inputting unwanted audio input signals as applied to said at least one external sound source” (claim 7), or the “first filtering” of claims 1 and 7 (App. Br. 6).

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Brief and the Answer for their respective details.

ISSUES

There are two principal issues in the appeal before us.

The first issue is whether the Examiner erred in holding that Eatwell teaches receiving audio signals of the at least one external sound source, as required by claim 1.

The second issue is whether the Examiner erred in holding that Eatwell teaches first input means for inputting unwanted audio input signals as applied to “said at least one external sound source,” as required by claim 7.

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, they have invented a system and method for canceling the contribution of ‘unwanted’ signals from at least one external sound source and processing ‘wanted’ signals being delivered to headphones. An unwanted sound signal or noise cancellation system for headphones is combined with a wanted sound signal simulation system for headphones (Spec. 1).

Eatwell

2. Eatwell teaches an equalization filter continuously adjusted in response to the signal from a sensor (microphone) which monitors the sound close to a listener's ear. The audio system can be combined with an active noise control system to reduce interference from external noise (Abstract; col. 3, ll. 43-45).

3. Eatwell teaches receiving audio input signals (Fig. 4, the audio signal picked up by microphone 8, transmitted as microphone signal 9) of an external sound source (e.g., noise due to vibration of magnets in an MRI scanner – see col. 6, ll. 1-7).

4. Cancellation filter 3 of Eatwell receives an input signal from element 16, which itself combines microphone signal 9 and the output signal from sensor model 19 (Fig. 4; col. 4, l. 64 – col. 5, l. 17).

Cheng

5. Cheng teaches a noise-suppressing receiver which uses a receiver module to make a pickup which can attenuate the sound signals produced by the sound sources near the receiver module and can receive the sounds produced by farther sound sources (para. [0011]).

Pless

6. Pless teaches a headphone which will remain mute when it is not employed. The headphone includes a self-operating switch device which depends upon the position of the headphone at any particular time and which will act to switch the headphone off whenever the headphone is not in an operative position (col. 1, ll. 42-48).

Definition of “noise”

7. “Noise” is defined as “sound, esp. of a loud, harsh, or confused kind: deafening noises.” noise. (n.d.). *Dictionary.com Unabridged (v 1.1)*. Retrieved May 02, 2008, from Dictionary.com website: <http://dictionary.reference.com/browse/noise>.

Definition of “carrier wave”

8. A carrier wave is defined as “in electronics, the unmodulated single-frequency electromagnetic wave that carries the desired information—*i.e.*, is modulated by the information.” carrier wave. (2008). *Encyclopædia Britannica*. Retrieved May 2, 2008, from Encyclopædia Britannica Online: <http://www.britannica.com/eb/article-9020505>.

PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing 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 (2007) (*citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellant. *Piasecki*,

745 F.2d at 1472. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion.

During *ex parte* prosecution, claims must be interpreted as broadly as their terms reasonably allow since Applicants have the power during the administrative process to amend the claims to avoid the prior art. *In re Zletz*, 893 F.2d 319, 322 (Fed. Cir. 1989).

Computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994).

A transitory, propagating signal is not a "process, machine, manufacture, or composition of matter." Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter. *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007).

ANALYSIS

Claims 1-4, 14, and 15

We select claim 1 as representative of this group, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Appellants argue that there is no disclosure in Eatwell of “at least one external sound source” nor of “unwanted sound signals from at least one external sound source,” but rather that Eatwell merely discloses “external noise,” “uncorrelated with the desired signal” (App. Br. 8). Appellants urge a claim interpretation under which we must read the audio input signals *applied to* the external sound source as the audio signals *of* the external sound source (App. Br. 8).

We decline to adopt such an interpretation, and find Appellants’ arguments unpersuasive. Nothing in Appellants’ Specification requires that “audio input signals of an external sound source” (as claim 1 requires) be limited to the electrical signals *applied to* said source. We agree with the Examiner that the examples given by Appellants at pages 1 and 6 of the Specification, stating that the external sound source may be one or more loudspeakers, are merely illustrative and not limiting (Ans. 14). We agree with the Examiner that Eatwell teaches receiving audio input signals (Fig. 4, the audio signal picked up by microphone 8, transmitted as microphone signal 9) *of* (i.e., *associated with*) an external sound source (e.g., noise due to vibration of magnets in an MRI scanner) (FF 3). Contrary to Appellants’ argument, we find no distinction between “sound” and “noise,” as recited in Appellants’ claims and disclosed in Eatwell. We further note that the

dictionary definition of “noise” is “*sound* – esp. of a loud, harsh, or confused kind” (FF 7; emphasis added).

With respect to Appellants’ argument that Eatwell does not teach “first filtering said received audio input signal to form anti-phase sound signals,” we agree with the Examiner. In that regard, we find that cancellation filter 3 of Eatwell (Fig. 4), which receives an input signal from element 16, which itself combines microphone signal 9 and the output from sensor model 19 (FF 4), meets the “first filtering” limitation, as the cancellation filter of Eatwell is “controlled” by resulting signal(s) from the microphone(s).

We agree with the Examiner that Eatwell teaches all of the elements of claim 1. We therefore do not find error in the Examiner’s rejection of claim 1, as well as claims 2-4, 14, and 15 dependent thereon, under 35 U.S.C. § 102.

Claims 7-13

We select claim 7 as representative of this group, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Claim 7 differs from claim 1 in reciting “first input means for inputting unwanted audio input signals *as applied to* said at least one external sound source” (emphasis added). The Examiner’s Answer makes no distinction between the language of claim 1 and of claim 7. Eatwell teaches a sensor (microphone 8) which provides a sensor signal (9) related to the sound at the ear of the listener (FF 2). As explained *supra* with respect to claim 1, such a microphone may fairly be read to receive audio input signals

of an external sound source, but cannot meet the recitation of a signal applied to an external sound source.

As a result, we agree with Appellants that Eatwell does not teach all of the elements of claim 7. We therefore find error in the Examiner's rejection of claims 7-13 under 35 U.S.C. § 102.

Claim 5

Appellants present no argument with respect to the rejection of claim 5 under 35 U.S.C. § 103.²

Claim 5 depends from independent claim 1. For the reasons expressed *supra* with respect to claim 1, we find that Eatwell in combination with Cheng teaches all the elements of claim 5. We do not find error in the Examiner's rejection of claim 5 under 35 U.S.C. § 103.

Claim 6

Appellants argue that Pless does not supply the teachings asserted to be missing from Eatwell. Because we find *supra* that Eatwell teaches all the limitations of claim 1, from which claim 6 depends, we are not persuaded by Appellants' arguments. We do not find error in the Examiner's rejection of claim 6 under 35 U.S.C. § 103.

Rejection of claims 14 and 15 under 37 C.F.R. § 41.50(b)

We make the following new grounds of rejection using our authority under 37 C.F.R. § 41.50(b).

² We note that Appellants did not list claim 5 as an appealed claim. We further note that Appellants attempted to cancel claim 5 in an amendment after final rejection, filed August 9, 2005, which was denied entry by the Examiner. As a result, claim 5 remains pending at the time of this appeal.

Claims 14 and 15 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claim 14 is directed to a “computer program” which is not embodied on any computer-readable medium. Such a program does not fit into any of the statutory classes of invention eligible for patent protection. Claim 14 is therefore directed to non-statutory subject matter.

Claim 15 is directed to “an information carrier” having stored thereon the computer program of claim 14. We note initially that the claimed “information carrier” appears to lack any support in Appellants’ Specification. Because Appellants’ Specification does not limit the phrase, we must construe “information carrier” broadly, as any tangible or intangible medium upon which information may be stored or conveyed. Such a construction would include a carrier wave, which is an unmodulated single-frequency electromagnetic wave that carries desired information (FF 8). Because such a signal does not fit into any of the statutory classes of invention eligible for patent protection (see *In re Nuijten, supra*), claim 15 is directed to non-statutory subject matter.

CONCLUSION OF LAW

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1-6, 14, and 15. Claims 1-6, 14, and 15 are not patentable.

We conclude that Appellants have shown that the Examiner erred in rejecting claims 7-13. On the record before us, claims 7-13 have not been shown to be unpatentable.

DECISION

The Examiner's rejection of claims 1-6, 14, and 15 is affirmed. The Examiner's rejection of claims 7-13 is reversed.

We have also entered a new ground of rejection against claims 14 and 15 under 37 C.F.R. § 41.50(b).

37 C.F.R. § 41.50(b) provides that, "[a] new grounds of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellants, *WITHIN TWO MONTHS FROM THE DATE OF THE DECISION*, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of proceedings (37 C.F.R. § 1.197 (b) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner ...

(2) Request that the proceeding be reheard under 37 C.F.R. § 41.52 by the Board upon the same record ...

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

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AFFIRMED-IN-PART
37 C.F.R. § 41.50(b)

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