

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL L. BEIGEL
and ROBERT E. MALM

Appeal No.1997-2455
Application 08/318,235

ON BRIEF

Before KRASS, FLEMING, and DIXON, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 29, 30, 55, 65, 77, 78, and 83. Claims 1 through 4, 12 through 28, 52, 53, 54, 63, 64, 70, 71, 73, 85 and 86 have been allowed. Claims 31 through 51, 66 through 69, 74, 75, 76, 79 through 82 and 84 have been withdrawn from

consideration as part of a restriction requirement. Claims 5 through 11, 56 through 62 and 72 have been canceled.

The invention relates to an electronic identification tag. On page 12 of the specification, Appellants identify that the tag communicates with a reader when the tag detects the presence of a carrier signal. As described in the Appellants' specification on page 2, the carrier signal provides both information and power to the tag. Appellants describe on page 13 of the specification that a communications coupling is made by an alternating magnetic field, which is detected by a transducer in the tag. As Appellants identify on page 14 of the specification, the transducer "is a resonant device which must be tuned electrically to achieve maximum power transfer between reader and tag." Further, on page 15 of the specification, the Appellants identify that the frequency of the carrier signal is measured and used to tune the transducer. The tag also contains a modulator connected across the transducer to generate messages to be transmitted to the reader. The modulator is shown in figure 5, and is described on pages 26 and 27 of Appellants' specification as generating a waveform by placing across the transducer either:

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voltage controlled resistors, voltage controlled charge injectors or a voltage controlled reactive load. Appellants identify on page 16 of the specification that the tag includes a microprocessor which controls the operation of all the units of the tag. On page 15 of the specification, Appellants identify that the tag also includes a power developer, which draws power from the transducer and provides power to the other units in the tag. As described in further detail on pages 17 and 18 of Appellants' specification, the power developer may contain either a capacitor or battery, which is charged when the carrier signal is present. Appellants identify on page 17 of the specification that in the embodiment which uses a battery, the battery is the power source for all of the tag components. Appellants identify on page 18 of the specification that in the embodiment which uses a capacitor, power is provided to the tag components from the capacitor charging circuit when the reader is transmitting the carrier signal and the capacitor provides power to the tag during those periods of time that the reader is not transmitting a carrier.

Independent claims 29 and 30 are representative of the invention:

29. A tag for use with a plurality of readers, a reader interrogating a tag by transmitting a carrier, the tag comprising:

a transducer having a resonant frequency, the resonant frequency being setttable to any one of a plurality of predetermined values;

a modulator connected across the transducer;

a control means for causing the modulator to drive the transducer with one or more message waveforms after interrogation by a reader, the tag identity being embedded in each of the message waveforms, the control means setting the resonant frequency of the transducer.

30. A tag for use with a plurality of readers, a reader interrogating a tag by transmitting a carrier, the tag comprising:

a transducer;

a modulator connected across the transducer;

a control means for causing the modulator to drive the transducer with one or more message waveforms after interrogation by a reader;

a two-stage power developer connected across the transducer for supplying power to the components comprising the tag, the power developer obtaining power from the voltage induced in the transducer by a reader's carrier, a first portion of the power supplied by the reader's carrier being supplied by the power developer directly to the tag components, a second portion of the power supplied by the reader's carrier being stored by the power developer and

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supplied to the tag components when the first portion is insufficient to power the tag.

The Examiner relies upon the following references:

Schuermann et al. (Schuermann) 1991	5,053,774	Oct. 1,
Beigel 1993	5,214,409	May 25,

Claim 29 stand rejected under 35 U.S.C. § 102 as being anticipated by Beigel.

Claims 30 and 65 stand rejected under 35 U.S.C. § 103 as being unpatentable over Beigel and what is commonly known in the art.

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Claims 55, 77, 78 and 83 stand rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter of the invention.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief and the answer for the respective details thereof.

OPINION

At the outset, we note that Appellants state on page 10 of appeal brief (brief) that with respect to the rejection based upon 35 U.S.C. § 112, second paragraph, claims 77, 78 and 83 stand or fall together. 37 C.F.R. § 1.192(c)(7) (July 1, 1995) **as amended at** 60 Fed. Reg. 14518 (March 17, 1995), which was controlling at the time of Appellants, filing the brief, states:

For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c)(8) of this section, appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable.

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Appellants have argued two groups of claims. Accordingly, for the rejection under 35 U.S.C. § 112, second paragraph, we will consider claim 55 as group 1 and claims 77, 78 and 83 as group 2.

We first consider whether claim 55 is properly rejected under 35 U.S.C. § 112, second paragraph. On page 3 of the Examiner's answer (answer), the Examiner states that the claim is confusing as it is an apparatus claim which depends upon a method claim. Appellants have not argued that the rejection is improper but rather state, on page 11 of the brief, that drafting claim 55 as an apparatus claim was a mistake. Since Appellants have made no arguments concerning the rejection of claim 55, we affirm the Examiner's rejection of claim 55.

We next consider the rejection of claims 77, 78 and 83 under 35 U.S.C. § 112, second paragraph. Analysis of 35 U.S.C.

§ 112, second paragraph, should begin with the determination of whether these claims set out and circumscribe the particular area with a reasonable degree of precision and particularity; it is here where definiteness of the language must be analyzed, not in a vacuum, but always in light of

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teachings of the disclosure as it would be interpreted by one
possessing ordinary skill in the art. *In re Johnson*, 558 F.2d
1008, 1015, 194 USPQ 187, 193

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(CCPA 1977)(citing *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (1971)). "The legal standard for definiteness is whether a claim reasonably appraises those of skill in the art of its scope." *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

On page 3 of the answer, the Examiner states that claims 77, 78 and 83 are incomplete and vague. The Examiner argues that claiming an apparatus does not further define or limit the method claims.

Appellants argue on page 12 of the brief, that these claims were prepared intending to create "means for practicing the process" linking claims as identified in MPEP § 806.05(e).

On page 23 of the brief, Appellants assert that these claims are in a shorthand form of means-plus-function where the functions are the steps of the method claim.

We find claims 77, 78 and 83 to be definite as they reasonably appraise those of skill in the art of their scope. We find that the scope of claim 77 includes any device which performs the method of claim 52. We note that claim 77 has a

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broad scope. However, as our reviewing court points out, a
claim which is of such breadth that it reads on subject matter

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disclosed in the prior art, is rejected under 35 U.S.C. § 102 rather than under 35 U.S.C. § 112, second paragraph. **See In re Hyatt**, 708 F.2d 712, 715, 218 USPQ 195, 197 (Fed. Cir. 1983) (citing **In re Borkowski**, 422 F.2d 904, 909, 164 USPQ 642, 645-46 (CCPA 1970)). Claims 78 and 83 are dependent on claims 65 and 70 respectively and are also formatted as an "[a]pparatus for practicing the method of claim." Accordingly, by the same analysis as applied above with respect to claim 77, we find that claims 78 and 83 are definite.

Next, we turn to the rejection of claim 29 under 35 U.S.C.

§ 102 as anticipated by Beigel. We find that Beigel anticipates claim 29. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. **RCA Corp. v. Applied Digital Data Sys. Inc.**, 730 F.2d 1440, 1444, 221 USPQ 385,388 (Fed. Cir.), **cert. dismissed**, 468 U.S. 1228 (1984); **W. L. Gore & Assocs., Inc. v. Garlock Inc.**, 721 F.2d 1540, 1554,

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220 USPQ 303, 313 (Fed. Cir. 1983), **cert. denied**, 469 U.S. 851 (1984).

(A reference anticipates a claim if it discloses the claimed invention "such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.)" **In re Graves**, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995)(citing **In re LeGrice**, 301 F.2d 929, 936, 133 USPQ 365, 372 (CCPA 1962)).

Appellants argue on page 13 of the brief that Beigel does not teach that the resonant frequency of the transducer is settable to any of a plurality of predetermined values and that the control means sets the resonant frequency of the transducer. On pages 13 and 14 of the brief, Appellants state that Beigel's coil capacitor corresponds to the claimed transducer. Appellants also assert that Beigel's variable load is the counterpart of the claimed modulator and that Beigel's controller is the counterpart to the claimed controller. On page 14 of the brief, Appellants assert that the resonant frequency of Beigel's coil capacitor combination is fixed. On page 15 of the brief, the Appellants assert that

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Beigel's controller only interacts with the coil capacitor combination via the variable load, whereas Appellants claimed control means also sets the resonant frequency of the transducer. Appellants assert that "[t]ransmitting a message sequence to the variable load is not the same as setting the resonant frequency of the coil-capacitor combination." On page 16 of the brief, Appellants argue that "[i]n claim 29 the term 'resonant frequency' always refers to the transducer by itself." Appellants point out that on page 14 of the specification, the adjustment of the resonant frequency of the coil capacitor combination is accomplished by using a variable inductor or a variable capacitor. On page 17 of the brief, Appellants summarize their arguments with respect to the rejection based upon 35 U.S.C. § 102 stating that: a) Beigel does not show a coil capacitor combination which has a settable resonant frequency and b) a control means which sets the resonant frequency of the coil capacitor.

On page 5 of the answer, the Examiner acknowledges that there is a difference between the resonant frequency of the coil capacitor combination and the coil capacitor combination augmented by the load. However, the Examiner asserts that the

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difference is not shown by the language of claim 29. On pages 5 and 6 of the answer, the Examiner asserts that when the variable load is applied to the coil capacitor combination, it will in operation vary the resonating frequency of the coil capacitor combination.

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." *In re Hiniker Co.*, 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998). Claims will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not to be read into the claims. *In re Etter*, 756 F.2d 852, 858, 225 USPQ 1, 5 (Fed. Cir. 1985). Appellants' claim 29 includes that "a transducer having a resonant frequency, the resonant frequency being settable" and "the control means setting the resonant frequency of the transducer." Claim 29 does not define how the resonant frequency is adjusted. On page 16 of the brief, Appellants point out that page 14 of the specification states that the adjustment of the resonant frequency of the coil capacitor combination is accomplished by using a variable inductor or a variable capacitor. However,

the specification is silent as to how these elements are interconnected. Though Appellants have argued on page 24 of the brief that there is a distinction between the resonant frequency of coil capacitor pair and coil capacitor pair plus load, we find no such distinction. The circuit elements used to adjust the resonant frequency of the transducer are neither claimed nor disclosed in a manner which distinguishes these elements from a load on the transducer. Accordingly, we hold that the scope of claim 29 includes that the resonant frequency of the transducer is settable to any one of a plurality of values by the control means. Further, we find that the only requirement for the element which sets the resonant frequency is that it is controlled by the control means.

Having determined the scope of the claim, we next consider the disclosure of Beigel. We find that Beigel's coil 210 and capacitor 220, meet the claimed transducer having a resonant frequency. We find that Beigel's variable load meets the claimed modulator and that Beigel's controller 245 meets the claimed control means. Beigel discloses in column 6, lines 54 through 56, that the controller uses variable load to

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transmit messages. Beigel teaches that the variable load applies a load to the resonant circuit in accordance with a message from the controller. See column 7, lines 24 through 40. We find that the application of the variable resistor's load to the resonant circuit of Beigel's coil 210 and capacitor 220 will change the resonant frequency of coil capacitor circuit. As such, the coil capacitor circuit will have one resonant frequency and when the load is applied, the coil capacitor circuit will have a second resonant frequency. Thus, we find that Beigel discloses all of the limitations of claim 29 and we affirm the Examiner's rejection under 35 U.S.C. § 102.

We next turn to the rejection of claims 30 and 65 under 35 U.S.C. § 103. The Examiner has not set forth a **prima facie** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art or by the implication contained in such teachings or suggestions. **In re Sernaker**, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be

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considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v SGS Importers Int'l Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996) (***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984)).

On page 18 of the brief, Appellants assert that Beigel does not teach that the tag draws power from the carrier signal while some of the power is being stored. On page 20 of the brief, Appellants assert that Schuermann does not provide power while the RF pulse is present, but rather supplies power after the RF pulse has ended. Further, on page 21 of the brief, Appellants assert that there is no motivation to combine Schuermann with Beigel.

On page 4 of the answer, the Examiner asserts that modifying Beigel to include well-known power supply designs are obvious "since such means and methods of powering electronic devices are known and within the level or ordinary skill in the art." On page 4 of the final Office action, paper number 9, the Examiner asserts that Schuermann provides

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evidence of a well-known power supply for a tag which stores power from the transducer. On page 7 of the answer, the Examiner asserts that Schuermann teaches that the power is supplied to the tag when the capacitor reaches a value necessary for satisfactory operation. Further, the Examiner asserts that the presence or absence of the RF pulse is not an issue.

We first must determine the scope of the claims. The scope of claim 30 includes that the tag has a two stage power developer where:

a first portion of the power supplied by the reader's carrier being supplied by the power developer directly to the tag components, a second portion of the power supplied by the reader's carrier being stored by the power developer and supplied to the tag components when the first portion is insufficient to power the tag.

Similarly, claim 65 contains the limitation of "a first portion of the power being used directly to perform the steps, a second portion of the power being stored and used to perform the steps when the first source of power is insufficient."

Thus, both claims contain limitations that the power developer provides power directly from the transducer to the tag and a

power storage portion, and when the power from the transducer is insufficient the stored power is supplied to the tag.

Turning to the rejection under 35 U.S.C. § 103. On page 4 of the answer, the Examiner states that Beigel does not teach the claimed two-stage power developer. We agree. Beigel teaches that the power to the tag is supplied by an AC/DC converter connected to the transducer. See column 5, lines 19 through 23. We fail to find that Beigel teaches storage of some of the power for use when the power supplied from the transducer is insufficient. We find that Schuermann teaches a transponder tag which receives a radio frequency (RF) interrogation signal from a reader through a resonant circuit. The energy coupled through this resonant circuit is stored in a capacitor, item 136. See column 4, lines 48 through 52, and column 4, line 65 through column 5, line 1. After the voltage is high enough and the RF signal has ceased, the stored energy is used to power the circuits of the tag. See column 5, lines 18 through 36. Switch 156 supplies power to the circuits from capacitor 136. We find that Schuermann does not provide power to the tag's components directly from the transducer.

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We find that there is no suggestion in either of the references to combine the stored power teaching of Schuermann with the power drawn directly from the transducer of Beigel. Beigel teaches that the message is transmitted to the reader while the carrier is present. See Abstract, lines 7 through 11. Schuermann teaches that the energy from the RF signal is stored because the device does not transmit data to the reader until after the RF signal ceases. See column 2, lines 3 to 12. We find neither of the references teach a need for power during the presence of the carrier signal and after the carrier signal ceases. Thus, we do not find that either of the references provide suggestion to combine the teachings. Accordingly, we will not sustain the rejection of claims 30 and 65 under 35 U.S.C. § 103.

For the foregoing reasons, we affirm the Examiner's rejection of claim 55 under 35 U.S.C. § 112, second paragraph, and the Examiner's rejection of claim 29 under 35 U.S.C. § 102. We reverse the Examiner's rejection of claims 77, 78 and 83 under 35 U.S.C. § 112, second paragraph, and the Examiner's rejection of claims 30 and 65 under 35 U.S.C. § 103.

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

AFFIRMED-IN-PART

ERROL A. KRASS)	
Administrative Patent Judge))	
)	
)	BOARD OF PATENT
MICHAEL R. FLEMING)	
Administrative Patent Judge))	APPEALS AND
)	
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