

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte STEPHEN P. HUBBELL

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Appeal No. 1999-0602  
Application 08/469,393

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ON BRIEF

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Before THOMAS, BARRETT, and DIXON, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION BY BOARD

Appellant has appealed to the Board from the examiner's final rejection of claims 1-3, 6 and 8-15, which constitute all claims in the application.

Representative claim 15 is reproduced below:

15. A method for achieving an electrically small, ultrawideband, high dynamic range, active antenna, comprising the steps of:

arranging a plurality of magnetic field transducing devices in an array, each transducing device being responsive to incident electromagnetic radiation to provide a minimum detectable magnetic field sensitivity of about  $3 \times 10^{-14}$ T over a bandwidth from DC to 10 GHz;

distributing the incident electromagnetic radiation over the transducing devices wherein each transducing device provides an output signal indicative of the magnitude of the incident radiation; and

combining the output signal from each transducing device.

The following references are relied on by the examiner:

Hubbell	5,600,242	Feb. 4, 1997
Yokozawa et al. (Yokozawa) (Japanese) <sup>1</sup>	64-50975	Feb. 27, 1989
Fujimaki (Japanese) <sup>1</sup>	02-298878	Dec. 11, 1990
Biedermann et al. <sup>1</sup> (Biedermann)(German)	301301	Nov. 19, 1992

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<sup>1</sup> Our understanding of this reference is based upon a translation provided by the Scientific and Technical Information Center of the Patent & Trademark Office. A copy of the translation is enclosed with this decision.

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Welker et al. (Welker), "A Superconductive H-Field Antenna System," Laboratory for Physical Sciences, College Park, Maryland, (journal and publication date unknown), pages 183-187. <sup>2</sup>

Claims 1-3, 6 and 8-14 stand rejected under the judicially created doctrine obviousness-type double patenting as being unpatentable over claims 1-11 and 12-14 of appellant's prior patent 5,600,242, issued on February 4, 1997. Claim 15 stands rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being unpatentable over Yokozawa. Finally, claims 12-14 stand rejected under 35 U.S.C. §103. Page 3 of the final rejection states this rejection as Yokozawa in view of Fujimaki, Biedermann or Welker. It is noted, however, that the bottom of page 5 of the answer states the rejection as claims 12-14 being obvious over Yokozawa in view of Fujimaki, Biedermann and Welker. As will be indicated infra, we sustain this rejection irrespective of whether each of the secondary references is considered in the alternative with Yokozawa or all together with it.

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<sup>2</sup> There appears to be no publication date available for this reference. Since appellant makes reference to this document at pages 2 and 3 of the specification as filed, it is apparent that appellant considers it prior art to him.

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Rather than repeat the positions of the appellant and the examiner, reference is made to the brief and reply brief for appellant's positions and to the final rejection and answer for the examiner's positions.

#### OPINION

For the reasons set forth by the examiner in the final rejection and answer, we sustain the rejection of each of the claims on appeal for each of the separately enumerated rejections. We embellish upon them here.

Turning first to the obviousness-type double patenting rejection of claims 1-3, 6 and 8-14, we sustain this rejection. At page 2 of the final rejection, the examiner takes the position that claims 1-3, 6 and 8-14 of this application are not patentably distinct over respective claims 1-11 and 12-14 of appellant's earlier patent because claims 1-11 of the patent cumulatively include the overall combination of elements recited in pending claims 1-3, 6 and 8-11 here; the examiner further notes that claims 12-14 of the patent are comparable to pending claims 12-14 in this application. The examiner considers that it would have been an obvious routine design undertaking from an artisan's perspective concerning the particular bandwidth recited in the claims, the maximum to minimum

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magnetic field ratio and the minimum detectable sensitivity claimed. None of these positions has been traversed by appellant in the brief and reply brief. Because of appellant's acquiescence to these positions, we agree with them and sustain the rejection accordingly.

Appellant's only argument as to this rejection presented in the brief and reply brief relates to alleged delays during the prosecution of the application that are considered to be the fault of the PTO rather than of applicant. We do not agree with appellant's conclusion that the "public is not harmed" by any patent term extension caused by such delays. Thus appellant's argument essentially admits that there is a time-wise extension of the subject matter encompassed by the claims in the present appeal over those of the earlier patent. Appellant presents no legal precedent to support the conclusion that the rejection should be reversed by us. The only delays in which we are aware that may bear on this type of issue occur when a second filed application issues before the first filed application, where the first filed application issues later in time with broader claims than those of the second in time filed application. Since the present application was filed after the parent application and is still pending, that earlier fact scenario does not apply to the facts presented in this appeal. Since appellant has presented no persuasive arguments to

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us on the merits and no persuasive arguments on a procedural basis, we sustain the rejection.

Turning next to the rejection of claim 15 under 35 U.S.C. §102(b) and its separate rejection under 35 U.S.C. §103(a), we sustain both rejections. We make reference initially to the examiner's statement of this rejection at pages 2 and 3 of the final rejection as further amplified at pages 4 and 5 of the answer. The examiner has essentially correlated the structural features presented in appellant's "method of achieving an . . . antenna" of claim 15 in the noted pages of the final rejection and answer.

Our study of the translation of Yokozawa is consistent with the examiner's views expressed in these portions of the final rejection and answer. Claim 15 does not recite the manner in which the plurality of magnetic field transducing devices are connected in the array claimed. Thus, the various serially connected and parallel connected SQUIDs in Yokozawa meet this broadly defined feature of the claims. The various figures of Yokozawa show the manner in which this SQUIDs are connected in series, in parallel and in a combination of serial and parallel networks. As such, the electromagnetic radiation is therefore broadly distributed as claimed over the entire arrays shown in these figures. Not only does the amplifier 5 in the figures provide a means of combining the output signals

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from each of the respective SQUIDs as claimed, the fact that they are connected in series and/or serial-parallel combinations also provides the combining feature of claim 15. Moreover, the overall aim as set forth at the top of page 2 of the translation of Yokozawa's invention is to provide a flux meter capable of very high sensitivities of magnetic flux signal strengths. Even the prior art at page 2 of this translation indicates that it was known in the art to use closed loop-shaped magnetic flux transmitting circuits, which would have also aided in the distribution of the incident electromagnetic radiation of claim 15 on appeal, notwithstanding the examiner's additional reliance upon the structure of Figure 7 of Yokozawa to meet this feature. The top of page 4 of the translation even indicates generally that "[i]n any application, the number and arrangement of the impedance of the SQUID assembly are selected so that the noise index of the amplifier of the latter stage may be minimum [minimized]." Thus, the manner and arrangement as well as the number of SQUIDs may be selected for a given application as argued by the examiner at the top of page 3 of the final rejection.

The focus of appellant's arguments relate to the feature of providing "a minimum detectable magnetic field sensitivity of about  $3 \times 10^{-14}$ T over a bandwidth from DC to

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10 GHz." The claimed bandwidth is generally achieved according to the overall structure of the specification as filed as taught in many places. However, the only location in the specification as filed relating to the magnetic field sensitivity being about  $3 \times 10^{-14}T$  is as set forth in the first paragraph of page 12 of the specification as filed. The prototype discussed there has been presented as a modified version of the disclosed invention in Figure 4 such that it does not include the flux focuser large area coil 408 of Figure 4, but only a fractional turn coil. This modification is not consistent with the disclosed invention. Furthermore, only a low-frequency signal source was said to be used as the excitation for the test sensor claimed which is not consistent with the claimed bandwidth being from DC to 10 GHz. Thus, the derivation of the magnetic field sensitivity of claim 15 (and for that matter, claims 12-14 as well) is strongly questioned.

The examiner's views as to these rejections is bottomed upon his view that the structure claimed is not only met by Yokozawa, the claimed sensitivity value is inherently there as well. We first agree because the examiner has provided to us evidence that all the claimed structure was present in Yokozawa. We also agree since appellant has only presented a functional distinction which has a very weak basis in the specification as filed for its justification. Appellant's argument at the top of page 6 of the brief, for example,

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believes that the claimed sensitivity is achieved based upon how it is done "in the specification." We note, however, that no structural recitations are recited in claim 15 on the basis of what is actually disclosed in the specification to achieve this sensitivity. We will not import into claim 15 any structural means to achieve the claim sensitivity that are not specifically recited in the claim itself. The claim is essentially a functional recitation with very little if any structure to support the claimed recitation of function.

Our reviewing court has stated on more than one occasion:

[I]t is elementary that the mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied upon.

See In re Ludtke, 441 F.2d 660, 169 USPQ 563 (CCPA 1971); In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971). We do not understand later case law to have changed these considerations. Moreover, appellant has presented no evidence in the brief and reply brief to obviate the examiner's conclusion of inherency of the functional limitation argued such as to persuade us the claim is patentable. What evidence we noted in the specification as filed at page 12 does not support appellant's conclusion either.

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As a final matter with respect to claim 15, we note the claim is recited in such a manner as to state that each transducing device of the plurality recited broadly to exist in some kind of an array is said to provide the claimed magnetic field sensitivity. Again, this is not supported by the discussion at the top of page 12 of the specification as filed because the recited value for the magnetic field sensitivity of about  $3 \times 10^{-14}T$  is an attribute that is characteristic of the 100 - element SQUID sensor there and not of any individual SQUID element per se within the array. Claim 15 does not properly recite that the alleged magnetic field sensitivity is a property of the array as a whole.

Appellant's alleged sensitivity is in part due greatly to the fact that the various SQUIDs are serially connected into a planar array or a linear array. Yokozawa clearly teaches and shows these features. The measure that appellant uses is apparently based upon a consideration of only one SQUID as compared to a plurality in various forms and various arrays as the basis for the enhanced sensitivity values. To round out our consideration of this issue, we agree with the examiner's statement at page 5 of the answer that "[t]here are no characteristics recited of the claimed array which would intrinsically provide the claimed sensitivity and bandwidth, and thus distinguish over Yokozawa."

Finally, we turn to the rejection of claims 12-14 under 35 U.S.C. § 103. We agree with the examiner's analysis set forth initially for this rejection at pages 3 and 4 of the final rejection which has been embellished by the examiner at pages 5 and 6 of the answer.

As to appellant's argument at page 6 of the brief that none of the references of record recognize the problems that appellant's arrangement overcomes or the benefits achievable with the device that he has invented, we not only disagree with the assertion that the art does not recognize the benefits achievable by appellant's invention, but note that patentability is not required to be based upon the problems/solution analysis identical to applicant.

To the extent appellant argues that the purposes of the references relied upon by the examiner are different from the appellant's disclosed purpose, this is not pertinent to the issue and is essentially irrelevant if the prior art teachings would have led the artisan to construct an arrangement having the claimed structural features.

In re Heck, 699 F.2d 1331, 216 USPQ 1038 (Fed. Cir. 1983) and In re Kronig, 539 F.2d 1300, 190 USPQ 425 (CCPA 1976). In re Heck also indicates that the use of patents as references is not limited to what the patentees described as their own invention.

The law of obviousness does not require that references be combined for reasons contemplated by an inventor, but only looks to whether the motivation or suggestion to combine references is provided by prior art taken as a whole. In re Beattie, 974 F.2d 1309, 24 USPQ2d 1040 (Fed. Cir. 1992). In an obviousness determination, the prior art

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need not suggest solving the same problem set forth by appellant. In re Dillon, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990)(en banc)(overruling in part In re Wright, 848 F.3d 1216, 1220, 6 USPQ2d 1959, 1962 (Fed. Cir. 1988)), cert. denied, 500 U.S. 904 (1991).

Appellant's position at the bottom of page 6 of the brief that there is no incentive to combine the references of record is misplaced. The top of page 7 of the translation indicates that a feedback circuit for SQUID assemblies was known in the art but Yokozawa chose not to utilize it. Each of the secondary references relied upon by the examiner confirm the desirability and the features of claim 12 on appeal argued to be advantageous over Yokozawa's approach. The claimed analog feedback means is stated to be based upon a negative feedback approach to provide a substantially linear dynamic range for the bandwidth. Page 186 of Welker article just below the depiction of the overall circuit in Figure 2 indicates that the depicted feedback loop is used to linearize the system. Its depiction in Figure 2 suggests a negative feedback approach. As to Fujimaki, even the brief abstract associated with this reference indicates that the feedback loop 21 in the various figures provides negative feedback. The translation of page 10 of this reference indicates that when the feedback loop 21 is utilized the upper limit of the dynamic range disappears suggesting a more linear and broader dynamic range as claimed. A similar statement is found in the translation at the top of page 11. Finally, even Biedermann's brief abstract shows and states that a negative or degenerative feedback resistor 7 is utilized to

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the input coil 11. Note the bottom of page 5 of the translation of this reference. Finally, appellant's comment at the bottom of page 6 of the reply brief that the secondary references do not provide analog feedback with the simple circuitry that appellant claims is misplaced. Appellant only claims broadly an analog feedback means providing various functional features, which the secondary reference do teach and show.

In view of the foregoing, we have sustained the examiner's rejection based upon obviousness-type double patenting of claims 1-3, 6 and 8-14. We have also sustained the rejection in the alternative of claim 15 under 35 U.S.C. § 102 and 35 U.S.C. § 103. We have also sustained the examiner's rejection of claims 12-14 under 35 U.S.C. § 103. Therefore, the decision of the examiner is affirmed.

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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).

AFFIRMED

James D. Thomas	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
Lee E. Barrett	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
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Joseph L. Dixon	)	
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