

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS J. LEMENSE

Appeal No. 1999-1742
Application No. 08/730,674

HEARD: October 23, 2000

Before ABRAMS, NASE, and GONZALES, Administrative Patent Judges.

GONZALES, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 20, which are all of the claims pending in this application.

We REVERSE.

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The appellant discloses an apparatus and method for sensing the presence of a rearward facing child restraint seat on a vehicle seat and preventing deployment of an air bag restraint. See specification, p. 1. The appealed claims are directed to an apparatus (claims 1-8 and 14-20) and method (claims 9-13) for sensing the presence of an object. A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Blackburn et al. (Blackburn)	5,605,348	Feb. 25, 1997 (filing date Nov. 3, 1993)
Breed et al. (Breed)	5,653,462	Aug. 05, 1997 (effective filing date Mar. 31, 1993)

Claims 1 through 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Blackburn in view of Breed.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejection, we make reference to the answer (Paper No. 8) for the examiner's complete reasoning in support of the rejection and to the main and reply briefs (Paper Nos. 7 and 9, respectively) for the appellant's arguments thereagainst.

OPINION

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In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

We begin by observing that in rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Only if that burden is met does the burden of coming forward with either evidence or argument shift to the applicant. Id. If the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

Turning now to the subject matter set forth in the appealed claims, independent claim 1 calls for an apparatus for sensing the presence of an object comprising, inter alia, identifier means securable to the object for providing an electromagnetic return signal at a first frequency in response to a transmitted

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electromagnetic signal, means for mixing signals having the first frequency from the return signal and a second frequency different from the first frequency to provide a beat signal having a beat frequency, and means coupled to receive the beat signal for determining the presence of the identifier means when a predetermined beat frequency is received and providing a signal indicative thereof.

Independent claim 14 calls for an apparatus for sensing the presence of an object comprising signal means for providing a first electrical signal having a first frequency during a first time period and a second electrical signal having a second frequency during a second, different time period, antenna means for transmitting an electromagnetic signal at the first frequency during the first time period in response to said first electrical signal and for providing an electrical return signal in response to a received electromagnetic return signal, identifier means securable to the object for providing an electromagnetic return signal in response to said transmitted electromagnetic signal, said electromagnetic return signal continuing for a time duration past the termination of said transmitted electromagnetic signal, combiner means for mixing

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said second electrical signal provided by said signal means and said electrical return signal to provide a beat signal having a beat frequency, and means coupled to receive said beat signal for determining the presence of said identifier means when a predetermined beat frequency is received for at least a predetermined duration after the termination of said transmitted electromagnetic signal and providing a signal indicative thereof.

Independent claim 9 is directed to a method for sensing the presence of an object comprising, inter alia, the steps of providing an electromagnetic return signal from an identifier means secured to the object in response to a transmitted electromagnetic signal, the electromagnetic return signal having a first frequency, providing a signal at a second frequency, different from the first frequency, mixing signals having the first frequency from the return signal and the second frequency to provide a beat signal having a beat frequency, determining the presence of the identifier means when a predetermined beat frequency in the beat signal is present, and providing a signal indicative of the presence of the identifier means.

To support the rejection of claims 1 through 20 under

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35 U.S.C. § 103, the examiner cites Blackburn and Breed. Blackburn, like the appellant, discloses an apparatus and method for sensing the presence of a rearward facing child restraint seat on a vehicle seat and preventing deployment of an air bag restraint. Blackburn's apparatus also includes an identification tag 60 secured to the child restraining seat. According to one embodiment, the tag radiates a passive return electromagnetic field (EMF) signal at 60 kHz in response to a pulse 140 applied to antenna 26. See Fig. 4. The 60 kHz return EMF signal radiated by the tag 60 is received by antenna coil 26 which transforms the return signal into a received electric signal. A bandpass filter 200 is connected to the antenna coil for passing the received electric signal having a predetermined frequency of 60 kHz to a discriminating circuit 210 which monitors for the presence of a return EMF signal having a frequency equal to 60 kHz and a predetermined minimum amplitude. See col. 5, ll. 22-36. If such a return EMF signal is present, it indicates that an identification tag is present and within a predetermined distance of the antenna coil 26. In such a case, a signal is supplied by the discriminating circuit to prevent deployment of an air bag.

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Breed discloses an occupant position sensor adapted for installation in the passenger compartment of an automotive vehicle equipped with a passenger protective device such as an inflatable air bag. When the vehicle is subjected to a crash of sufficient magnitude as to require deployment of the protective device and the sensor system has determined that the device is to be deployed, the occupant position sensor determines the position of the occupant relative to the air bag and disables deployment of the air bag if the occupant is positioned so that he/she is likely to be injured by the deploying air bag. See col. 5, ll. 7-18.

In the embodiment shown in Figure 8 of Breed, a 144 MHZ signal is fed into an infrared diode driver 803 which drives an infrared diode 804 causing it to emit infrared light modulated at 144 MHZ and a reference phase angle of zero degrees. The infrared diode 804 is directed at the vehicle occupant. A second signal 3f2 having a frequency of 144.15 MHZ is fed into a mixer 807 which combines it with the 144 MHZ signal. The combined signal from the mixer 807 is fed to filter 808 which removes all signals except for the difference, or beat frequency, of 150 KHz. The infrared signal which is reflected

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from the occupant is received by receiver 809 and fed into pre-amplifier 811. This reflected or return signal has the same modulation frequency, 144 MHZ, as the transmitted signal but now is out of phase with the transmitted signal by an angle x due to the path that the signal took from the transmitter to the occupant and back to the receiver. The output from pre-amplifier 811 is fed to a second mixer 812 along with the 144.15 MHZ signal 3f2. The output from mixer 812 is amplified and fed into filter 814. The filter 814 eliminates all frequencies except for the 150 KHz difference or beat frequency in a similar manner as was done by filter 808. The resulting 150 KHz frequency, however, has a phase angle x relative to the signal from filter 808. Both 150 KHz signals are fed into a phase detector 815 which determines the magnitude of the phase angle x . The phase angle x is used to determine the distance from the transmitting diode to the occupant. See col. 12, ll. 26-65.

With regard to claims 1 and 9, the examiner acknowledges (answer, p. 4) that Blackburn does not disclose a step or means for mixing signals having a first frequency from the

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return signal and a second frequency to provide a beat signal having a beat frequency.

For this feature, the examiner relies on Breed for a teaching of a vehicle occupant position sensor wherein the sensor disables the inflatable restraint system if the occupant is in danger including

a first and second signal generated pulse, the second signal having a second frequency slightly different from the first signal and a means for combining the first and second signal to produce a first beat signal (See column 15, lines 1-11).

Answer, p. 4. The examiner concluded that it would have been obvious to combine the teachings of Blackburn and Breed "in order to provide an appropriate signal that would allow the safe deployment of the restraining device" (answer, p. 5).

As to claim 14, the examiner also acknowledges (answer, p. 6) that Blackburn does not disclose "the combiner for mixing the frequency signals as discussed and therefore is rejected for the same reasons as discussed above."

The appellant argues that a person of ordinary skill in the art would not have arrived at the claimed invention based on the combined teachings of the applied prior art, except by the use

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of impermissible hindsight. See brief, pp. 12-15. We agree.

To establish a prima facie case of obviousness, the examiner must show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." In re Fine, 837 F.2d at 1074, 5 USPQ2d at 1598. It is to be noted, however, that citing references which merely indicate that isolated elements and/or features recited in the claims are known is not a sufficient basis for concluding that the combination of claimed elements would have been obvious. That is to say, there should be something in the prior art or a convincing line of reasoning in the answer suggesting the desirability of combining the references in such a manner as to arrive at the claimed invention. In re Deminski, 796 F.2d 436, 443, 230 USPQ 313, 316 (Fed. Cir. 1986).

Reviewing the answer, we note that the examiner fails to identify anything in the art suggesting the desirability of combining the teachings of Blackburn and Breed other than a general desire "to provide an appropriate signal that would

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allow the safe deployment of the restraining device" (answer, p. 5). Yet, later on in the answer, the examiner acknowledges that, even without modification, Blackburn's transmitter is capable of transmitting "an appropriate signal" and that "the purpose for modifying the Blackburn reference with that of Breed was not only to transmit an appropriate signal but because it is in the same field of endeavor" (answer, p. 7). However, even if Blackburn and Breed are in the same field of endeavor, that fact is not a convincing reason for combining the particular signal mixing feature of Breed's system (which determines the distance to an object by measuring the phase shift between a first reference beat signal and a second beat signal derived from an infrared frequency modulated return signal) with the signal processing system in Blackburn (which determines the presence of an object by checking for an EMF signal of a predetermined frequency and amplitude) in such a manner as to arrive at the claimed invention. In our view, the only suggestion for modifying Blackburn in the manner proposed by the examiner to meet the limitations of claims 1, 9 and 14 stems from hindsight knowledge derived from the appellant's own disclosure. The use of such hindsight knowledge to support an obviousness rejection

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under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

It follows that we cannot sustain the examiner's rejection of claims 1, 9 and 14 or of claims 2 through 8, 10 through 13 and 15 through 20, dependent thereon.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 through 20 under 35 U.S.C. § 103(a) is reversed.

REVERSED

NEAL E. ABRAMS)	
Administrative Patent Judge)	
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JEFFREY V. NASE)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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