

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PHILIP B. GIANGARRA and JAMES D. DWORKIN

Appeal No. 1998-1507
Application No. 08/499,988

ON BRIEF

Before KRASS, BARRETT, and BLANKENSHIP, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 19, all of the claims pending in the application.

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The invention is directed to converting a floating point number to a programmable fixed point number best illustrated by reference to representative independent claim 1 reproduced as follows:

1. A programmable floating point to fixed point converter, comprising:

a shifter having a data input coupled for receiving a signal representing a mantissa of a floating point number and an output for providing a fixed point number;

an adder having a first input coupled for receiving an offset signal that programs the floating point to fixed point conversion, a second input coupled for receiving a signal representing an exponent of said floating point number, and an output coupled to a shift control input of said shifter for controlling shifting of said mantissa of said floating point number to convert to the fixed point number.

The examiner relies on the following reference:

Waggener, Jr. (Waggener) 5,161,117 Nov. 3, 1992

Claims 1 through 19 stand rejected under 35 U.S.C. § 103 as unpatentable over Waggener.

Reference is made to the brief and answer for the respective positions of appellants and the examiner.

OPINION

We reverse.

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Each of independent claims 1, 6 and 11 requires an "offset signal that programs the floating point to fixed point conversion...." Waggener is directed to a conversion from one floating point format to another floating point format. Waggener is not concerned with a floating point to fixed point conversion as is each of the claims on appeal.

The examiner recognizes this difference but still concludes that the instant claimed subject matter would have been obvious, within the meaning of 35 U.S.C. § 103, over Waggener because it would have been obvious "to program the shifter (130) of Waggener's floating point device for **floating point to fixed point conversion** if it were considered desirable for any reason to obtain a fixed point" [Answer-page 4, emphasis in the original]. The examiner bases this conclusion on the capability of Waggener's shifter (130) to shift digits of the mantissa portion of the "floating point number on the basis of the proper increment (claimed offset signal)" [Answer-page 4].

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In our view, the examiner has failed to establish a prima facie case of obviousness. The mere shifting of digits in Waggener's shifter does not, in our view, equate to the claimed "offset signal that programs the floating point to fixed point conversion." Waggener converts a floating point number in one format to a floating point number in a different format and does this by splitting the floating point number in the first format into sign, exponent and fraction components and using the exponent to shift the fractional component, if necessary. The exponent component is modified in the shift control block 124 according to the new floating point number format. Waggener does not disclose or suggest the claimed offset signal that programs the shifter to perform a floating point to fixed point conversion.¹

Even if, as the examiner asserts, the artisan recognized a desirability to obtain a fixed point number rather than another floating point number, the examiner has provided no

¹The offset signal programs the resolution of the fixed point number wherein a low valued offset signal provides more accuracy in the whole number portion of the fixed point number and a high valued offset signal provides more accuracy in the fractional portion of the fixed point number.

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convincing rationale as to why the artisan would have made such a conversion from floating point to fixed point by providing an offset signal in the manner claimed.

Accordingly, we will not sustain the rejection of any of the claims under 35 U.S.C. § 103 based on the evidence provided by the examiner.

We also note the examiner's apparent reliance on U.S. Patent Nos. 5,220,589 and 5,619,198 as examples of prior art disclosing the addition of an offset value to an input signal. To whatever extent such art may be applicable to the instant claimed subject matter, we have not considered these references since they form no part of the examiner's statement of rejection. Where a reference is relied on to support a rejection, whether or not in a minor capacity, there would appear to be no excuse for not positively including the reference in the statement of the rejection. In re Hoch, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970).

The examiner's decision is reversed.

REVERSED

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ERROL A. KRASS)	
Administrative Patent Judge)	
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