

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* LARRY D. HEWITT

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Appeal 2007-4085  
Application 10/266,152  
Technology Center 2100

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Decided: April 21, 2008

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Before JAMES D. THOMAS, JOSEPH L. DIXON  
and ST. JOHN COURTENAY II, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 through 48. Since pages 2 and 12 of the Answer make clear that the Examiner has withdrawn the rejection as to claims 31 through 48, claims 1 through 30 remain on appeal. We have jurisdiction under 35 U.S.C. § 6(b).

As best representative of the disclosed and claimed invention, independent claim 1 is reproduced below:

1. A system for synchronizing clock signals, the system comprising:

a clock unit, wherein the clock unit is configured to receive a reference clock signal and to output a plurality of domain clock signals, wherein each of the domain clock signals has a different frequency with respect to the other domain clock signals;

a synchronization unit, wherein the synchronization unit is configured to receive the reference clock signal, wherein the synchronization unit is configured to assert a synchronization pulse at a rate equivalent to a beat frequency of the plurality of domain clock signals, and wherein clock signal edges of each of the domain clock signals are aligned responsive to asserting the synchronization pulse.

The following references are relied upon by the Examiner:

Self <sup>1</sup>	U.S. 6,047,383	Jan. 4, 2000
McClintock	U.S. 5,606,276	Feb. 25, 1997
Price	U.S. 5,450,458	Sep. 12, 1995
Jefferson	U.S. 5,744,991	Apr. 28, 1998

Claims 1 through 30 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the Examiner relies upon Self in view of McClintock as to claims 1 through 4, 6 through 8, 14 through 19, 21 through 23, 29, and 30. To this combination of references the Examiner adds Price as to claims 5 and 20, and the Examiner separately adds Jefferson as to claims 9 through 11, 13, 24 through 26, and 28. Lastly, in the fourth stated

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<sup>1</sup> Page 3 of the Answer incorrectly lists the patent number of this reference as 6,074,383 instead of 6,047,383.

rejection, the Examiner relies upon Self in view of McClintock, further in view of Jefferson and Price as to claims 12 and 27.

Rather than repeat verbatim the positions of the Appellant and the Examiner, reference is made to the Brief and Reply Brief for Appellant's positions and to the Answer for the Examiner's positions.

## OPINION

We affirm.

At the outset, we note that Appellant separately argues independent claims 1 and 16 in a corresponding manner according to the positions set forth at pages 6 through 23 of the principal Brief and the bulk of the Reply Brief as well. No arguments are presented as to any dependent claim within the first stated rejection relying upon Self in view of McClintock. Pages 31 through 34 of the principal Brief do not present separate arguments as to the second through fourth stated rejections but instead collectively rely upon the positions set forth with respect to the first stated rejection as to claim 1 and, respectively, claim 16. A corresponding approach is taken in the Reply Brief. Because independent claim 1 has corresponding teachings to those of claim 16, we will treat the features of independent claim 1.

Appellant's repeated urging in the Brief and Reply Brief that the references respectively teach away from a feature of the claimed invention is noted. As to the specific question of "teaching away," our reviewing court in *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) stated "[a] reference may be said to teach away when a person of ordinary skill, upon [examining] the

reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant."

Beginning at page 6 of the Brief, Appellant variously argues that McClintock teaches away from the subject matter of independent claim 1, that the combination of Self and McClintock both teach away from the proposed combination, that the proposed motivation would change the principle of operation of Self, and that the proposed motivation would render Self unsatisfactory for its intended purpose. Without repeating verbatim the various positions set forth in the Brief, which are essentially repeated in the Reply Brief, Appellant's view is that McClintock teaches away from the use of a system or reference clock, whereas Self teaches a reference clock signal as an essential element. From our study of both references in light of these urgings, we agree with Appellant's views that, according to the above-noted case law, we consider that the artisan would have been discouraged from following the path set out in McClintock. Essentially, we agree with the broader perspective that it would not have been obvious for an artisan to have utilized the teachings within McClintock to have modified Self in accordance with the reasoning set forth by the Examiner. In our view, it would have been speculative to have concluded that the artisan would have looked to or otherwise relied upon any teachings of the clocking circuits of McClintock, which does not rely upon a reference clock signal, as a basis to modify the teachings of Self, which does require the use of a reference clock.

On the other hand, notwithstanding these considerations, we sustain the rejection of representative independent claim 1 because it appears that the artisan would have found the subject matter of this claim obvious within the teachings of Self alone within 35 U.S.C. § 103. It appears to us that both the Examiner and the Appellant have given an incomplete consideration of the teachings of Self.

Column 1 of Self begins a discussion of skewing a propagated clock signal with respect to a master clock signal or any other propagated clock signal. This is shown in figure 2 with respect to the various delays shown there. The contribution of Self shown in figure 3 attempts to synchronize the propagated clock signals with respect to the reference clock signal by essentially modifying the electrical length of the feedback path in an effort to ensure that the propagation traces themselves have the same length within integrated circuit shown there.

What are most applicable to the subject matter of the present claims on appeal are the showings in figures 4 and 5, as discussed at columns 7 and 8 of this reference. The various phase locked loops 410, 420, 430 in figure 4 comprise the claimed clock unit within the integrated circuit 400 such as to produce a plurality of clock signals feeding respective component devices shown to the right of this figure in such a manner that different frequencies may be attributed to each of these clock signals. In correspondence with the claimed synchronization unit, figure 4 provides programmable dividers/counters 450, 460 which provide the functionality associated with the two wherein clauses in this portion of representative claim 1 on appeal. Again, it should be emphasized that the discussion at columns 7 and 8

associated with figures 4 and 5 emphasize the synchronization of the respective rising edges, as an example of the propagated clock signals, with respect to the same reference clock signal which feeds both the synchronization unit and the respective phase locked loop or clocking units themselves which are said to provide different clocking frequencies. Figure 5 shows the alignment according to the requirement of the edges being aligned at the end of claim 1 on appeal.

What is also significant according to these teachings is that the claimed equivalent beat frequency among the plurality of the main clock signals is met by the teachings of the programmable dividers/counters which provide the claimed synchronization pulse or pulses. As discussed in the middle of page 15 of the Specification as filed, the beat frequency of the clock patterns may be defined as the frequency of the reference clock itself divided by a number N. This is essentially the same teaching provided at columns 7 and 8 as well as the abstract of Self even though the term “beat frequency” is not expressly set forth among those teachings. Self appears to teach in words different than utilizing the beat frequency language per se to achieve the synchronization unit functionality of synchronizing at an equivalent rate to the claimed beat frequency since both clock frequencies shown in figure 5, for example, commonly or equivalently rely upon the same reference signal among the circuits in figure 4. The discussion beginning in the paragraph bridging columns 7 and 8 through the discussion at the end of the patent essentially emphasize this.

In view of the foregoing, the decision of the Examiner rejecting claims 1 through 30 under 35 U.S.C. § 103 is affirmed.

Appeal 2007-4085  
Application 10/266,152

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

AFFIRMED

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B. Noel Kivlin  
Conley, Rose, & Tayon, P.C.  
P.O. Box 398  
Austin TX 78767