

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* KAZUHIRO TAKEDA

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Appeal 2006-2853  
Application 10/145,933  
Technology Center 3600

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Decided: March 23, 2007

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Before TERRY J. OWENS, STUART S. LEVY, and LINDA E. HORNER,  
*Administrative Patent Judges.*

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

The Appellant appeals from a rejection of claims 1-42, which are all of the pending claims. In the Examiner's Answer the rejection is withdrawn as to claims 7-9, 11, 12, 14-21, 26-33 and 35-42 (Answer 2).

THE INVENTION

The Appellant claims an apparatus for determining when to shift a bicycle chain from one sprocket to another. Claim 1 is illustrative:

1. An apparatus for determining when to shift a bicycle chain from a first sprocket having a first number of teeth to a second sprocket having a second number of teeth, comprising:

a memory for storing a reference value; and

a processor that determines a shift value corresponding to a shift speed for shifting the chain from the first sprocket to the second sprocket by multiplying the reference value by one of the first number of teeth and the second number of teeth and dividing by the other one of the first number of teeth and the second number of teeth.

#### THE REFERENCE

Browning

US 5,261,858

Nov. 16, 1993

#### THE REJECTIONS

Claims 1-5, 10, 13, 22-25 and 34 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Browning.<sup>1</sup>

#### OPINION

We reverse the aforementioned rejection.

The portion of Browning relied upon by the Examiner is column 9, line 15 to column 10, line 26 (Answer 3). In that portion of Browning, a bicycle's "true gear" is obtained from a table showing, for each gear, either the number of crank signals generated during 5 hub signals (Table 5), or an index based upon that number of crank signals (Table 6). The crank signals are obtained from a crank sensor (120) in a front gear assembly (170), and the hub signals are obtained from a hub sensor (130) in a rear gear assembly (180) (Browning, col. 4, ll. 6-31; fig. 1B). The crank sensor generates one signal per 1/8 revolution of the crank, and the hub sensor generates 1 signal

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<sup>1</sup> The rejection of claim 6 is not maintained in the Examiner's Answer (p. 3). Consequently, we consider the rejection of that claim to be withdrawn.

per revolution of the hub (Browning, col. 9, ll. 18-21). The number of crank signals generated during 5 hub signals in Table 5 is calculated from the formula:  $(5 * \# \text{ of rear teeth} / \# \text{ of front teeth}) * 8$  (Browning, col. 9, ll. 28-34).

The Examiner argues (Answer 4):

The limitations of the claims only requires [sic] a processor that determines a shift value corresponding to a shift speed, which is determined by multiplying the reference value by one of the first number of teeth and the second number of teeth and dividing by the other one of the first number of teeth and the second number of teeth. The Browning reference meets the limitations of the claims because the first number of teeth correspond to the rear number of teeth, and the second number of teeth correspond to the front number of teeth.

The first and second sprockets in the body of the Appellant's claim 1 are the sprockets in the preamble, i.e., a first sprocket having a first number of teeth and the second sprocket having a second number of teeth. The shift recited in that claim is from the first sprocket to the second sprocket. Such a shift also is recited in the Appellant's other independent claim (22). In contrast, the front and rear teeth in Browning are teeth on, respectively, a crank sprocket and rear wheel sprocket (fig. 1B). There is no shift from one of those sprockets to the other. Thus, the Examiner's argument that "[t]he Browning reference meets the limitations of the claims because the first number of teeth correspond to the rear number of teeth, and the second number of teeth correspond to the front number of teeth" (Answer 4) is incorrect.

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The Examiner, therefore, has not established a prima facie case of anticipation of the Appellant's claimed invention.

**DECISION**

The rejection of claims 1-5, 10, 13, 22-25 and 34 under 35 U.S.C. § 102(b) over Browning is reversed.

**REVERSED**

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