Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* DONALD G. LEITH

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Appeal No. 2004-1376
Application No. 09/859,984

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ON BRIEF

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Before KIMLIN, OWENS and JEFFREY T. SMITH, ***Administrative Patent Judges***.

JEFFREY T. SMITH, ***Administrative Patent Judge.***

## *DECISION ON APPEAL*

Applicant appeals the decision of the Primary Examiner finally rejecting claims 1, 5, 7, 11, 19 and 20.[1] We have jurisdiction under 35 U.S.C. § 134.[2]

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[1] The Examiner has indicated that the subject matter of claims 6, 12 and 21-23 is allowable. However, the claims have been objected to as being dependent upon a rejected base claim. (Answer, p. 1).

[2] In rendering this decision, we have considered Appellant's arguments presented in the Brief filed January 28, 2003 and the Reply Brief filed April 23, 2003.

## *CITED PRIOR ART*

As evidence of unpatentability, the Examiner relies on the following reference:[3]

Karl GB 2,168,458 Jun. 18, 1986

## THE REJECTIONS

The Examiner rejected claims 1, 5, 7, 11, 19 and 20 under 35 U.S.C. § 102(b) as anticipated or in the alternative under 35 U.S.C. § 103(a) as unpatentable over Karl. (Final Rejection, pp. 3-9).

## *DISCUSSION*

Upon careful review of the respective positions advanced by Appellant and the Examiner, we find that the Examiner has failed to carry the burden of establishing a ***prima facie*** case of anticipation or obviousness. Consequently, we will not affirm the rejection of the claims under §§ 102 and 103. Rather than reiterate the conflicting viewpoints advanced by the Examiner and Appellant concerning the above-noted rejections, we refer to the Answer and the Briefs. Appellant's invention relates to a crankshaft assembly of the type used in internal

[3] The Examiner also cited Donahue, U.S. Patent 5,038,847 as evidence to support the Official notice statement in the rejection.

combustion engines. The scope of Appellant's invention can be ascertained from claims 1, 7 and 19 reproduced below:

> 1. A crankshaft assembly comprising:
>
> a one-piece elongated shaft adapted to rotate about a longitudinal axis, said shaft having a crankpin radially offset from said axis of said shaft, said crankpin being spaced axially inwardly from each end of said shaft,
>
> an elongated connecting rod having a one-piece annular bearing support at one end, said annular bearing support being positioned around said crankpin,
>
> a first counterweight being secured to said shaft adjacent one end of said crankpin, and
>
> a second counterweight being secured to said shaft adjacent the other end of said crankpin.
>
> 7. A crankshaft assembly comprising:
>
> a one-piece elongated shaft adapted to rotate about a longitudinal axis, said shaft having a crankpin radially offset from said axis of said shaft, said crankpin being spaced axially inwardly from each end of said shaft,
>
> an elongated connecting rod having a one-piece annular bearing support at one end, said annular bearing support being positioned around said crankpin by sliding said one-piece annular bearing support over one end of said shaft and onto said crankpin,

a first counterweight being secured to said shaft adjacent one end of said crankpin, and

a second counterweight being secured to said shaft adjacent the other end of said crankpin after said connecting rod bearing support is positioned around said crankpin.

19. A crankshaft assembly comprising:

a one-piece elongated shaft adapted to rotate about a longitudinal axis, said shaft having a crankpin with an outer bearing surface radially offset from said axis of said shaft, said crankpin being spaced axially inwardly from each end of said shaft, said crankshaft having a first counterweight positioned adjacent one end of said crankpin, said shaft and said counterweight being of a one-piece construction,

an elongated connecting rod having a one-piece annular bearing with a bearing surface at one end, said annular bearing being positioned around said crankpin by sliding said one-piece annular bearing over an end of said shaft opposite from said first counterweight and onto said crankpin so that said connecting rod bearing surface abuts against said crankpin bearing surface, and

a second counterweight being secured to said shaft adjacent the other end of said crankpin after said connecting rod bearing is positioned around said crankpin.

In order for a claimed invention to be anticipated under 35 U.S.C. § 102, all of the elements of the claim must be found in one reference. *Scripps Clinic & Research Found. v. Genentech Inc.,* 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

The subject matter of the independent claims 1, 7 and 19 all require a one-piece elongated shaft adapted to rotate about a longitudinal axis. The shaft has a crankpin radially offset from said axis of the shaft. Each claim also requires an elongated connecting rod. The connecting rod has a one-piece annular bearing support at one end. According to the specification, page 6, the bearing support is positioned around said crankpin by sliding the one-piece bearing support over one end of said shaft and onto said crankpin. Further, the claims also require one counterweight (claim 19) or two counterweights (claims 1 and 7) to be secured to the shaft adjacent one end of the crankpin.

The Examiner acknowledges that the crankshaft assembly of Karl is not formed as one piece; however, the Examiner asserts that the present claims are anticipated by Karl. Specifically the Examiner states:

> Karl teaches the crankshaft assembly substantially as claimed, however, the shaft and the pin of Karl are not formed as one-piece. Applicant's claim 1 and other claims below are anticipated by Karl because the Supreme Court in *Howard v. Detroit Stove Works,* 150 US 164 (1893) has long settled that "as to the third patent, it is void because the claims in it were *clearly anticipated,* and because *it involves no invention to cast in one piece an article which has formerly been cast in two pieces and put together*."
> [Final Rejection, p. 3, emphasis original]

If the shaft and the pin of Karl are formed as one piece as suggested by the Examiner, the result would not be the claimed invention. Specifically, the Examiner has not accounted for the required a one piece bearing support. The Examiner's proposed structure joining the shaft and pin together would not allow the use of a one piece bearing support. The proposed structure would not allow the bearing support to be slid into place because the proposed structure would include the counter weights that are attached to the crankshaft web depicted by figures 1 and 2. Consequently, if the shaft and pin structure of Karl were formed as one piece as suggested by the Examiner the resulting crankshaft assembly would require the use of a multiple piece bearing support.

Moreover, the Examiner does not address the requirement of the claims that the crankshaft assembly comprise at least one counterweight secured to the shaft adjacent one end of the crankpin. The structure proposed by the Examiner would incorporate counterweights in the one piece design. The Examiner has not addressed securing additional counterweights to the assembly.

The Examiner alternatively rejected the subject matter of claims 1, 5, 7, 11, 19 and 20 under 35 U.S.C. § 103(a) over Karl. In support of this rejection, the Examiner refers to a patent to Donahue, U.S. 5,038,847.[4]

The Examiner's rationale is that it was well known in the art to form a crankshaft and crankpin as one piece. The Examiner asserts "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to form the shaft and crankpin of Karl as one-piece instead of separate pieces in order to simplify the cost of manufacturing as suggested by common knowledge in the art." (Final Rejection, p. 5).

The Examiner's rejection under § 103 fails for the same reasons presented above. Specifically, if the shaft and pin structure of Karl were formed as one piece as suggested by the Examiner the resulting crankshaft assembly would require the use of a multiple piece bearing support.[5] The Examiner has not provided motivation for modifying the crankweb of Karl to exclude the counter weights.[6]

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[4] In the Answer, the Examiner has provided an extensive discussion of the Donahue reference. However, the rejection appearing in the Final Rejection is based on Karl alone. The Examiner cited the Donahue reference as evidence that forming a one piece crankshaft assembly is well known in the art. (Final Rejection, p. 5).

[5] The crankshaft depicted in the Donahue reference would not allow the sliding attachment of a one piece bearing support around the crankpin.

[6] The counter weights appearing in the Donahue reference appear to be formed during the cast forming of the crankshaft assembly.

The presence of the counter weights in the suggested one piece crankshaft assembly of Karl would prevent the use of a one piece bearing support that could be slid into place. Moreover, the Examiner has not addressed the means for securing additional counterweights to the assembly. The mere fact that the prior art could be modified as proposed by the Examiner is not sufficient to establish a *prima facie* case of obviousness. *See In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). The Examiner must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. *See Fritch*, 972 F.2d at 1266, 23 USPQ2d at 1783-84. The Examiner has not provided such an explanation.

Since we reverse for the lack of the presentation of a *prima facie* case of obviousness by the Examiner, we need not reach the issue of the sufficiency of the rebuttal evidence as allegedly demonstrating unexpected results. *See In re Geiger,* 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987).

The rejection of claims 1, 5, 7, 11, 19 and 20 under 35 U.S.C. § 102(b) as anticipated or in the alternative under 35 U.S.C. § 103(a) as obvious over Karl is reversed.

## *CONCLUSION*

For The forgoing reasons the Examiner's rejections of the claims are reversed.

**REVERSED**

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| EDWARD C. KIMLIN<br>***Administrative Patent Judge*** | ) |
| TERRY J. OWENS<br>***Administrative Patent Judge*** | ) **BOARD OF PATENT**<br>) **APPEALS**<br>) **AND**<br>) **INTERFERENCES** |
| JEFFREY T. SMITH<br>***Administrative Patent Judge*** | ) |

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