

The opinion in support of the decision being entered today was **not** written for publication and 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 ROBERT W. HELT

Appeal No. 1999-1051
Application No. 08/652,740

ON BRIEF

Before COHEN, ABRAMS and STAAB, Administrative Patent Judges.
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-3, 6-11, 14, 15 and 17-20, which are all of the claims pending in this application. However, in the Answer, the examiner indicated that claims 15 and 17-20 now were considered to be allowable, leaving claims 1-3, 6-11 and 14 before us on appeal.

We AFFIRM-IN-PART.

BACKGROUND

The appellant's invention relates to an apparatus for generating a spark (claims 1-3 and 6-8), a gas burning appliance (claims 9-11), and a residential gas furnace (claim 14). An understanding of the invention can be derived from a reading of exemplary claims 1, 9 and 14, which appear 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:

Lister	3,260,299	Jul. 12, 1966
Kaduki <u>et al.</u> (Kaduki)	4,073,611	Feb. 14, 1978
Wallace <u>et al.</u> (Wallace)	4,483,672	Nov. 20, 1984
Phillips <u>et al.</u> (Phillips)	5,409,373	Apr. 25, 1995
Morita <u>et al.</u> (Morita)	5,550,704	Aug. 27, 1996

Claims 1-3 and 6-11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kaduki in view of Phillips, Morita and Lister.

Claims 10 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kaduki in view of Phillips, Morita, Lister and Wallace.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 13) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 12) for the appellant's arguments thereagainst.

OPINION

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

All of the rejections are under 35 U.S.C. § 103. The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

The appellant's invention is directed to an improvement in apparatus for generating a spark for igniting devices such as gas appliances. It is pointed out in the specification

that it has become common in the prior art to utilize high voltage step up transformers to provide the operating voltage for the spark gaps in this type of apparatus, along with sensitive microprocessors and microcontrollers to implement circuit control functions. According to the appellant, the high voltage and the spark generated by the transformers can give rise to electromagnetic interference (EMI), which causes the microprocessors and microcontrollers to malfunction. It is a major objective of the claimed invention to eliminate or reduce this problem. As manifested in independent claim 1, the invention comprises two spaced electrodes forming a spark gap, a high voltage step up transformer “in close proximity” and connected to the spark gap and supporting at least one of the electrodes, a circuit that is susceptible to malfunction due to EMI “located remotely” with respect to the spark gap and the transformer, and a shell encasing the transformer and a “root” of the at least one electrode and providing enhanced EMI protection. Independent claim 9 incorporates these features into a gas burning appliance.

The examiner has assembled four references to support the conclusion that the subject matter of claim 1 is unpatentable under Section 103. The first of these is Kaduki, which discloses, in schematic form, the required two spaced electrodes and an unspecified type of ignition means connected to a suitable electric power source. Kaduki makes no mention of the problem to which the appellant has directed his inventive efforts. Kaduki does not disclose the claimed high voltage step up transformer or positively

establish that there is an ignition means in close proximity to the spark gap. It also fails to disclose a transformer that supports at least one of the electrodes, a circuit that is susceptible to malfunction due to EMI and is located remotely with respect to the spark gap and a transformer, or a shell encasing the transformer and a root of the electrode and providing enhanced EMI protection.

According to the examiner, the use of transformers to provide the energy to create a spark between electrodes to ignite a furnace in the prior art is disclosed by Phillips, and it would have been obvious to one of ordinary skill in the art to utilize such a device in the Kaduki system. We note here that the Phillips transformer is not specified as being of the high voltage step up type, but the appellant has acknowledged on page 1 of the specification that such has been used in the prior art. Whether the Phillips transformer is in "close proximity" to the spark gap is open to argument, but it is clear that the transformer does not "support" an electrode, in the context in which this is disclosed in the appellant's invention. There is no disclosure in Phillips from which to conclude that there is a circuit that is susceptible to malfunction due to EMI generated by the spark gap and the transformer, much less that it is located remote from these elements. Nor does Phillips teach encasing a transformer and a root of an electrode in a shell to provide enhanced EMI protection. For this, the examiner looks to Morita, directed to an ignition coil for an internal combustion engine, which teaches insulating the primary coil and the core from high

tension components by filling the casing in which all are contained with insulating resin, and Lister, which discloses a transistorized fuel burner ignition system in which a transformer is “potted” in a suitable epoxy, for unspecified reasons.

The examiner has taken elements from each of the above-described references and combined them in such a manner as to meet the terms of the claims, apparently based upon the fact that the individual elements recited can be found in the prior art and such premises as the electrical circuit in Kaduki “appears to be spaced or remote” from the transformer and spark gap and the claimed arrangements “would have been obvious” for various reasons (Answer, pages 5 and 6). However, the mere fact that the prior art structure could be modified does not make such a modification obvious unless the prior art suggests the desirability of doing so. See In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). From our perspective, there is no teaching, suggestion or incentive which would have led one of ordinary skill in the art to pick and choose certain elements from each of the three secondary references and then incorporate them into the Kaduki system in the manner proposed by the examiner other than the hindsight afforded one who first viewed the appellant’s disclosure. This, of course, is not a proper basis for a rejection under 35 U.S.C. § 103. In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

It therefore is our conclusion that a prima facie case of obviousness has not been established with regard to the subject matter recited in independent claims 1 and 9, and we will not sustain the rejection of these claims or of claims 2, 3, 6-8, 10 and 11, which depend therefrom.

We reach the opposite conclusion with regard to independent claim 14. This claim is not nearly as detailed as claims 1 and 9, since it does not require a specific type of transformer, that the transformer support at least one electrode, any particular spacing between certain of the components, and a circuit that would be susceptible to malfunction from EMI. Claim 14 merely recites a housing, a heat exchanger and a gas burner operatively associated and located in the housing, a gas line providing gas to the burner, a spark ignitor for igniting the gas in the burner, and an EMI housing¹ substantially enclosing the spark ignitor.

It is our view that, except for the EMI housing, all of the elements recited in the claim are disclosed by Kaduki, considering that it would be inherent that the apparatus therein disclosed be located within an overall housing and that the gas flame heats some sort of a heat exchanger that also is located in that housing, as per Wallace. It is our further view that one of ordinary skill in the art would have found it obvious to provide an EMI housing substantially enclosing the spark ignitor, suggestion being found in the explicit teachings of

¹In keeping with the specification, we interpret “EMI housing” to mean a housing that will provide enhanced EMI protection.

Morita and Lister² and in self-evident advantages of separating by suitable protective means components which would adversely affect the performance of one another, which is within the skill that must be accorded one of ordinary skill in the art.³ In this regard, Morita and Lister insulate components from one another by filling the casings in which they are located with epoxy, which the artisan would have recognized was for the purpose of protecting one from the influence of the other.

We conclude that the combined teachings of Kaduki, Phillips, Morita, Lister and Wallace establish a prima facie case of obviousness with regard to the subject matter of claim 14, and we will sustain the rejection of this claim. While we have carefully considered the arguments raised by the appellant in rebuttal, we find them not to be persuasive, noting that some of the arguments are directed to elements which are not present in the claim, and that although none of the references explicitly mention EMI, Morita and Lister utilize as their protective shells the same material as disclosed by the appellant, and therefore it can be expected also to reduce EMI.

²We are bound to consider the disclosure of a reference for what it fairly teaches one of ordinary skill in the art, including not only the specific teachings, but also the inferences which one of ordinary skill in the art would reasonably have been expected to draw therefrom. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966) and In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

³In an obviousness assessment, skill is presumed on the part of the artisan, rather than the lack thereof. In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

Claim 10, which depends from independent claim 1, was rejected along with claim 1. For reasons set forth above that have to do with the lack of a prima facie case of obviousness being established with regard to claim 1, we did not sustain that rejection of claim 10. The examiner also has chosen to reject claim 10 along with claim 14. Although we have sustained the rejection of claim 14, we will not sustain the second rejection of claim 10, in view of the fact that further consideration of Wallace fails to overcome the problems we found with the rejection of parent claim 1.

SUMMARY

The rejection of claims 1-3 and 6-11 as being unpatentable over Kaduki in view of Phillips, Morita and Lister is not sustained.

The rejection of claim 10 as being unpatentable over Kaduki in view of Phillips, Morita, Lister and Wallace is not sustained.

The rejection of claim 14 as being unpatentable over Kaduki in view of Phillips, Morita, Lister and Wallace is sustained.

The decision of the examiner is AFFIRMED-IN-PART.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

IRWIN CHARLES COHEN)	
Administrative Patent Judge)	
)	
)	
)	
)	BOARD OF PATENT
NEAL E. ABRAMS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
)	
)	
)	
LAWRENCE J. STAAB)	
Administrative Patent Judge)	

Appeal No. 1999-1051
Application No. 08/652,740

Page 11

THE TRANE COMPANY
PATENT DEPARTMENT 12-1
3600 PAMMEL CREEK ROAD
LA CROSSE , WI 54601

APPEAL NO. 1999-1051 - JUDGE ABRAMS
APPLICATION NO. 08/652,740

APJ ABRAMS

APJ STAAB

APJ COHEN

DECISION: AFFIRMED-IN-PART

Prepared By:

DRAFT TYPED: 14 Aug 01

FINAL TYPED: