

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NOBUYUKI SAWAZAKI, TAKAFUMI NARISHIGE, SHIGEMI
MURATA, MITSURU KOIWA and YUTAKA OHASHI

Appeal No. 1997-0212
Application 08/206,669¹

HEARD: October 20, 1999

Before THOMAS, RUGGIERO and HECKER, Administrative Patent
Judges.

HECKER, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 5, 11, 12, 14 and 20 through 23. Claims 6 through 10, 13 and 15 through 19 were indicated as allowable

¹ Application for patent filed March 7, 1994.

in the Examiner's Answer at page 6. Thus, claims 1 through 5, 11, 12, 14 and 20 through 23 remain under appeal.

The invention relates to an ignition device for an internal combustion engine. Electrical connections among coil windings, connectors, switching assemblies and integrated circuits are made using integrated conductors instead of a wire harness.

Representative independent claim 1 is reproduced as follows:

1. An ignition coil for an internal combustion engine, comprising:

a plurality of voltage transforming sections, each voltage transforming section including

a plurality of windings having one of an end portion and a terminal,

at least one bobbin for aligning said windings, and

a plurality of iron cores for magnetically coupling said plurality of windings;

a plurality of conductors connected to said one of the winding ends and terminals of said plurality of voltage transforming sections; and

a resin part for integrating said plurality of conductors as a first integrated conductor.

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The Examiner relies on the following references:

Ida et al. (Ida) 5,109,209 Apr. 28, 1992
Takaishi et al. (Takaishi) 5,186,154 Feb. 16, 1993

Claims 1 through 5, 11, 12, 14 and 20 through 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Takaishi in view of Ida.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief, reply brief and answer for the respective details thereof.

OPINION

After a careful review of the evidence before us, we will sustain the rejection of claims 1 through 5, 11, 12, 14 and 20 through 23 under 35 U.S.C. § 103.

At the outset, we note that Appellants have indicated on page 1 of the reply brief that claims 1 through 3 and 20 through 22 stand or fall together as a group, and claims 4, 5, 11, 12, 14 and 23 stand or fall together as a group.

It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed

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invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

With regard to the rejection of claim 1, Appellants argue:

In addition to the express grounds of rejection contained in the Final Office Action, the Examiner also casually stated that the use of integrated conductors may be implicitly suggested in the drawings of Takaishi and Ida. (Final Office Action, page 3, line 10). However, Appellants are unsure how the drawings of either cited reference explicitly or implicitly teach the integrated conductor recited in claim 1.

.....Nevertheless, Appellants assume that the Examiner is referring to Figs. 13a and 13b of Ida to support his position. However, even assuming *arguendo* that Figs. 13a and 13b disclose an integrated conductor, such conductor does not disclose or teach the integrated conductor recited in claim 1 based on the reasons below.

.....Specifically, as shown in Figs. 13a and 13b of the reference, the terminal pins 251-254, terminal plates 261-264, and connecting forks 28 must be manually pressed into the terminal base 30. Accordingly, assembling such device via an automated process is difficult, if not impossible.

.....On the other hand, with respect to the present invention, a metal sheet is pressed to form

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a conductor 21, and the conductor 21 is insert-molded in a resin. (See Fig. 2A).Therefore, the conductors of the claimed invention can be produced quickly and inexpensively via an automation process. (Brief-pages 12 and 13.)

This argument fails at the outset because it is not based on any limitation appearing in the claims. Thus, the applicability of automation is immaterial. See *In re Self*, 671 F.2d 1344, 1350, 213 USPQ 1, 5 ((CCPA 1982).

In Appellants' argument recited supra, they have assumed arguendo that Ida's Figures 13a and 13b disclose an integrated conductor, and that is the real question. What is an integrated conductor? At oral hearing, Appellants stated that an integrated conductor is a well known term of art but could provide no evidentiary definition. In Appellants' specification, it states:

The present invention has been devised to overcome the above-described problems, and its object is to obtain a device which makes it possible to disuse the [wiring] harness for interconnecting the devices of an ignition system, facilitates assembly, has

high reliability of electrical connections, and is compact and inexpensive. (Page 2, lines 20-25.)

The integrated conductors in accordance with the present invention integrate the intricate connections of the ignition device, and are made compact and lightweight, so that they are easy to handle and can be readily incorporated into the case. Since the wire harness is made unnecessary, erroneous connections are not encountered. (Page 3, lines 13-17.)

Looking at Figures 13a and 13b of Ida we see a device which makes it possible to disuse a wiring harness for interconnecting devices in an ignition system. Pushing the integrated forks 28 over component wires (e.g. coil wire 71 in Figure 12) facilitates assembly with a high reliability of making intricate electrical connections. We find that the device depicted in Figures 13a and 13b of Ida is an integrated conductor as described in Appellants' specification. Although the material used for terminal base 30 in figure 13a is not specifically recited in Ida or questioned by Appellants, we find that a resin would have been the obvious choice. This finding is based on the fact that terminal base 30 must be of

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an insulating material, and most of the apparatus of Ida is formed of an insulating resin. For example compartments 34, 35 and 36 of the coil case are potted with a resin and core covers 111 and 112 are molded of a relatively flexible resin.

Thus, we find that the "resin part for integrating said plurality of conductors as a first integrated conductor"

recited in claim 1 is met by Ida.

Claim 1 recites that the conductors of the integrated conductor are "connected to said one of the winding ends and terminals of said plurality of voltage transforming sections".

This is met by Ida in that the integrated conductor of Figure

13a connects coil wires 71 to terminal pins 25.

Although the Examiner discussed Takaishi with respect to the transformer windings and bobbins, these are not challenged by Appellants and are considered cumulative to those in Ida, at

least for the analysis of claim 1.

For the above reasons, we will sustain the Examiner's rejection of claim 1, and thereby claims 2, 3 and 20 through

22 which stand or fall therewith.

Claim 4 is representative of claims 4, 5, 11, 12, 14 and 23,

and adds "a plurality of switching assemblies....." and additional connections for "said conductors" in claim 1. Appellants argue that the claimed integrated conductor is not met by the cited references. We have found that the integrated conductor is met by Ida in our analysis of claim 1. Appellants further argue "Accordingly, since the reference does not teach connecting the terminals of an integrated conductor to a switching assembly, Appellants submit that claim 4 would not have been obvious over the cited references." (Brief-page 14.) The Examiner cites Takaishi for the combination of a switching assembly with a voltage transformer in an ignition coil for an internal combustion engine. Appellants do not dispute this combination, and in fact disclose such a combination as prior art at page 2, lines 10-18 of their specification.

Since Ida connects all its components via an integrated conductor, and since Ida has no switching assemblies, clearly Ida alone cannot teach the claim 4 connections. However, once Takaishi is combined with Ida, Ida would then have additional components, i.e., switching assemblies, to be connected. And,

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using Ida's scheme of connecting its components, it would have been obvious to expect Ida to connect these additional (switching) components via its integrated conductor.

Appellants' claims recite no structural barriers or particular component placements which would limit the use of an integrated conductor for all components connections. Thus we find all limitations of claim 4 to be met by the combination of Takaishi and Ida, and we will sustain the Examiner's rejection of claim 4. Likewise, we will sustain the rejection of claims 5², 11, 12, 14 and 23 which stand or fall with claim 4.

In view of the foregoing, the decision of the Examiner rejecting claims 1 through 5, 11, 12, 14 and 20 through 23 under 35 U.S.C. § 103 is affirmed.

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

AFFIRMED

² We note that "a second integrated conductor" is recited in claim 5 without the recitation of a first integrated conductor.

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