

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PATRIZIO VINCIARELLI

Appeal No. 1994-3610
Application 07/805,474¹

HEARD: August 11, 1995

Before HARKCOM, Vice Chief Administrative Patent Judge, BARRETT and FLEMING, Administrative Patent Judges.

HARKCOM, Vice Chief Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed December 11, 1991.

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-23, 26-31, 33-34 and 37-43. Claims 25, 32 and 35-36 have been cancelled. Claim 24 has been allowed by the examiner.²

The amendment after final rejection filed June 25, 1993, has been entered.³ The Reply Brief filed June 9, 1994, has also been entered.⁴

The claimed invention is directed to a method and apparatus for controlling capacitive input power switching devices. Representative independent claim 41 is reproduced as follows:

41. A method of controlling a power switching device having a capacitive gate control input, comprising:

providing a transformer having a preselected amount of leakage inductance;

providing a unidirectional conducting device connected between a secondary winding of the transformer and the capacitive gate control input;

turning on the power switching device by closing and opening a first switching device to connect a voltage source to a primary winding of the transformer to cause selected quantized forward energy transfer from the voltage source to charge the capacitive gate control input to a voltage greater than a reflected source voltage established by the voltage source and the transformer; and

turning off the power switching device by discharging the capacitive gate control input in response to the opened or closed state of the first switching device.

² Although claim 24 was rejected in the Final Rejection mailed February 4, 1993, the claim was indicated as being allowable in the Examiner's Answer (page 1) mailed April 6, 1994.

³ See the Advisory Action mailed July 22, 1993.

⁴ See the Examiner's communication (PTOL-90) mailed June 30, 1994.

The following references are relied on by the examiner:

Wazaki

Japanese Kokai Patent Application No. Sho 61-35616⁵ Published February 20, 1986

Tanitsu et al. (Tanitsu)

Japanese Kokai Patent Application No. Hei 1-300617⁶ Published December 5, 1989

Claims 1-4, 9-13, 17-20, 23, 31, 33-34 and 37-43 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tanitsu. Claims 14-16, 26-30 and 33-34 stand rejected under 35 U.S.C. § 103 as being unpatentable over Tanitsu.

Claims 1-4, 9-20, 23, 31, 33-34, and 37-43 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wazaki.⁷ Claims 5-8, 21-22, 26-30 and 33-34 stand rejected under 35 U.S.C. § 103 as being unpatentable over Wazaki.⁸

⁵ An English language translation of Wazaki is attached to this decision.

⁶ An English language translation of Tanitsu is attached to this decision.

⁷ In the Examiner's Answer, the examiner has incorrectly listed the claims rejected under 35 U.S.C. § 102(b) by Wazaki as claims 1-4, 9-20, 23, 31-32 and 35-40. From reviewing the record, it would appear that the actual claims rejected are 1-4, 9-20, 23, 31, 33-34 and 37-43. This latter collection of claims is what the appellant addressed in the Appeal Brief. Also, the appellant did not alter his position in the later filed Reply Brief.

⁸ In the Examiner's Answer, the examiner has incorrectly listed the claims rejected under 35 U.S.C. § 103 by Wazaki as claims 5-8, 21-22, 25-30 and 33-34. From reviewing the record, it would appear that the actual claims rejected are 5-8, 21-22, 26-30 and 33-34. This latter collection of claims is what the appellant addressed in the Appeal Brief. Also, the appellant did not alter his position in the later filed Reply Brief.

Rather than reiterate the arguments of the appellant and the examiner, reference is made to the Appeal Brief, the Reply Brief and the Examiner's Answer for the respective details thereof.

OPINION

As a preliminary matter, the appellant states that the claims should be considered as six separate groupings. [See Appeal Brief, pages 7-8.] We concur with this six grouping arrangement. The first claim grouping consists of claims 1-2, 11, 14-19, 26-31, 33-34, 37-38 and 41-43. The second claim grouping consists of claim 3. The third claim grouping consists of claims 4, 9-10 and 12-13. The fourth claim grouping consists of claims 5-8. The fifth claim grouping consists of claim 39. The sixth claim grouping consists of claims 20-23 and 40.⁹ Accordingly, with respect to patentability, all of the claims in each of these six claim groupings stand or fall together. [See 37 C.F.R. § 1.192(c)(5) and M.P.E.P. § 1206.]

We have carefully reviewed the positions of the appellant and the examiner, and have conducted a thorough study of the references relied on by the examiner in formulating the rejections. As a result of this review, we reverse the rejections of claims 1-23, 26-31, 33-34 and 37-43. Accordingly, we reverse.

⁹ This sixth claim grouping was modified from its original composition by the deletion of claim 24, since it has been subsequently allowed by the examiner. [See Reply Brief, page 7.]

With respect to the first grouping of claims, i.e., claims 1-2, 11, 14-19, 26-31, 33-34, 37-38 and 41-43, independent claim 41 is designated to be representative of this grouping. We note that all three independent claims, i.e., claims 1, 31 and 41, are included in this grouping. All three of these independent claims are also rejected under 35 U.S.C. § 102 (b) as being anticipated by either Wazaki or Tanitsu. As a result, we will evaluate the anticipation rejections of independent claim 41.

A claim is anticipated under 35 U.S.C. § 102 if “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (quoting Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051,1053 (Fed.Cir.1987)). The Federal Circuit further stated that “(t)o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’ ...’Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” Id. at 745, 49 USPQ2d at 1950-51 (quoting Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 U.S.P.Q.2d 1746, 1749 (Fed.Cir.1991)).

With respect to the first anticipation rejection, the Examiner describes how Wazaki is being applied on pages 6-7 of the Examiner’s Answer. In response to this application of prior art, the Appellant argues that Wazaki does not achieve Appellant’s key benefit of voltage amplification due to

selective quantized forward energy transfer and that Wazaki's switching functions differ significantly. (See Appeal Brief, pages 10-14.) In his rebuttal to these assertions, the Examiner merely states that "since the circuit of Wazaki is the same as that of the claimed invention, the functions should be the same. (emphasis added)" (See Examiner's Answer, page 8.)

In comparing the Appellant's invention illustrated in his Figure 5 with Wazaki's figures, there does exist substantial similarities in the circuitry, however, a closer inspection of the descriptions of how these circuits operate reveals that significant functional differences do exist. Claim 41 clearly recites that the transformer has a "preselected amount of leakage inductance" and that the power switching device is turned on by "closing and opening a first switching device to connect a voltage source to a primary winding of the transformer to cause selective quantized forward energy transfer from the voltage source to charge the capacitive gate control input to a voltage greater than a reflected source voltage established by the voltage source and the transformer." From reviewing Appellant's specification, it is clear that these passages refer to key functional features of his invention. The preselection of a specified leakage inductance together with the two-step switching function results in a predetermined quantized forward energy transfer at a voltage significantly greater (often twice as high) than the reflected source voltage. (See specification pages 14-18.)

In contrast, Wazaki's circuit does not provide a similar voltage amplification to the capacitive gate control input. In fact, Wazaki minimizes the impact of the selection of the transformer's leakage

inductance on his circuit. (See Wazaki, page 10.) Additionally, we concur with the Appellant's functional characterization of Wazaki's circuit in that the voltage supplied to the capacitive gate control input only appears to rise to the reflected source voltage level and that Wazaki only uses a one step switching function to effect the voltage transfer. (See Appeal Brief, pages 10-14, and Reply Brief, pages 1-4.) Thus, due to the fact that significant functional differences do exist between Appellant's independent claim 41 and Wazaki, the rejection is reversed.

With respect to the second anticipation rejection, the Examiner describes how Tanitsu is being applied on pages 2-5 of the Examiner's Answer. In response to this application of prior art, the Appellant argues that Tanitsu also does not achieve Appellant's key benefit of voltage amplification due to the selective quantized forward energy transfer and that Tanitsu's switching functions differ significantly. (See Appeal Brief, pages 14-15.) In his rebuttal to these assertions, the Examiner discounts the importance of the predetermined amount of leakage inductance in the transformer, and once again states that "since the circuit of Tanitsu is the same as that of the claimed invention, the functions should be the same. (emphasis added)" (See Examiner's Answer, pages 9-10.)

In comparing the Appellant's invention illustrated in Figure 5 with Tanitsu's figures, again there does exist substantial similarities in the circuitry, however, a closer inspection of the descriptions of how these circuits operate reveals that significant functional differences once again exist. In reiterating what was previously stated, Claim 41 clearly recites that the transformer has a "preselected amount of

leakage inductance” and that the power switching device is turned on by “closing and opening a first switching device to connect a voltage source to a primary winding of the transformer to cause selective quantized forward energy transfer from the voltage source to charge the capacitive gate control input to a voltage greater than a reflected source voltage established by the voltage source and the transformer.” From reviewing Appellant’s specification, it is clear that these passages refer to key functional features of his invention. The preselection of a specified leakage inductance together with the two-step switching function results in a predetermined quantized forward energy transfer at a voltage significantly greater (often twice as high) than the reflected source voltage. (See specification pages 14-18.)

In contrast, Tanitsu’s circuit description fails to make reference to any preselection of the amount of the transistor leakage inductance in order to affect the operational characteristics of the circuit, particularly not one that would contribute to a higher voltage being applied to the capacitive gate control input. Additionally, we concur with the Appellant’s functional characterization of Tanitsu’s circuit in that Tanitsu also appears to use a one step switching function to effect the voltage transfer. (See Appeal Brief, pages 14-15, and Reply Brief, pages 3-4.) Thus, due to the fact that significant functional differences do exist between Appellant’s independent claim 41 and Tanitsu, the rejection is reversed.

As stated above, the first grouping of claims includes the other two independent claims, i.e., claims 1 and 31, as well as independent claim 41. We note that independent claims 1 and 31 also

contain specific references to significant functional features similar to those found in independent claim 41. As a result, the rejections of these independent claims are also reversed. Furthermore, claim groupings 2-6 only contain claims dependent on the independent claims included in claim grouping 1. As a result, these rejections are likewise reversed. Thus, further analyses of these claim groupings are not deemed necessary.

In summation, we reverse the final rejection of claims 1-23, 26-31, 33-34 and 37-43.

REVERSED

GARY V. HARKCOM, Vice Chief)
Administrative Patent Judge)
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)
) BOARD OF PATENT
LEE E. BARRETT)
Administrative Patent Judge) APPEALS AND
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2 Attachments