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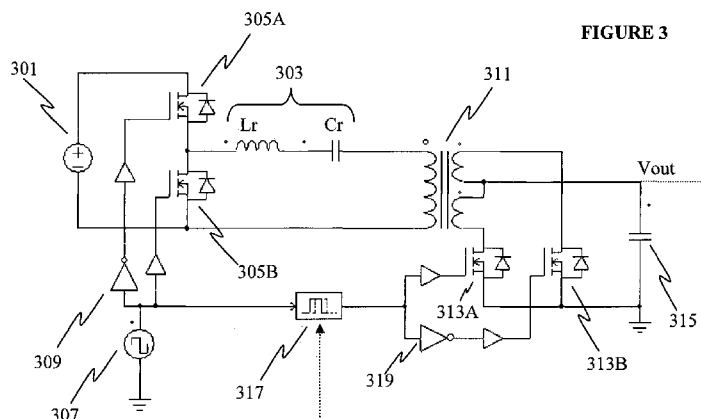
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) **Title:** AN IMPROVED RESONANT CONVERTER AND METHODS OF OPERATING



(57) **Abstract:** A resonant converter including: a resonant tank (303), a switching circuit (305) that connects the resonant tank to a power supply according to a first switching sequence (307), a synchronous rectifier circuit (313) that supplies power to an output, wherein the rectifier circuit (313) is switched according to a second switching sequence, and a phase delay module (317) arranged to delay the second switching sequence with respect to the first switching sequence to achieve a desired power output, and a method of controlling the same.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. H02M3/335 H02M3/338
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 H02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/226150 A1 (THOMAS PHILIPPE [FR] ET AL) 9 September 2010 (2010-09-09) figures 2,3,5 paragraphs [0005] - [0009], [0033], [0034], [0037], [0041] - [0047], [0051], [0056], [0057] -----	1-35
X	XIAODONG LI ET AL: "Analysis and Design of High-Frequency Isolated Dual-Bridge Series Resonant DC/DC Converter", IEEE TRANSACTIONS ON POWER ELECTRONICS, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 24, no. 4, 1 April 2010 (2010-04-01), pages 850-862, XP011296460, ISSN: 0885-8993 figures 2,3,4 Section II ----- -/--	1-35

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See patent family annex.

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>INOUE S ET AL: "A Bi-Directional Isolated DC/DC Converter as a Core Circuit of the Next-Generation Medium-Voltage Power Conversion System", POWER ELECTRONICS SPECIALISTS CONFERENCE, 2006. PESC '06. 37TH IEEE JEJU, KOREA 18-22 JUNE 2006, PISCATAWAY, NJ, USA, IEEE, 18 June 2006 (2006-06-18), pages 1-7, XP010945076, ISBN: 978-0-7803-9716-3 figure 3</p> <p align="center">-----</p>	2-7

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010226150 A1	09-09-2010	FR 2904159 A1	25-01-2008
		US 2010226150 A1	09-09-2010
		WO 2008009538 A1	24-01-2008
