Title: SYSTEMS FOR AND METHOD OF GENERATING A WELD DURING A START OF A WELDFING PROCESS BY Restricting Output

Abstract: Systems and methods for providing an improved start in a welding process are provided. The system may include a power circuit and a control circuit. The power circuit can generate a welding output power. The control circuit may be in communication with the power circuit to control, during the start of the welding process, at least one welding parameter until the control circuit determines that welding energy output exceeds an energy output threshold.

FIG. 3
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

— with international search report (Art. 21(3))
# INTERNATIONAL SEARCH REPORT

**International application No**
PCT/US2012/03952O

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A. **CLASSIFICATION OF SUBJECT MATTER**


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**According to International Patent Classification (IPC) or to both national classification and IPC**

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B. **FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)
B23K

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

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

EPO-Internal, WPI Data

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C. **DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>X</td>
<td>US 4 734 556 A (M. NAMI KI) 29 March 1988 (1988-03-29) col umn 4, line 5 - col umn 5, line 45; figures</td>
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<td>JP 2001 298994 A (DENYO CO LTD) 26 October 2001 (2001-10-26) abstract; figures</td>
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<td>US 4 000 374 A (E. J. J. DE KEYSER) 28 December 1976 (1976-12-28) abstract; claims; figures</td>
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<td>A</td>
<td>JP 63 299862 A (DAIHEN CORP) 7 December 1988 (1988-12-07) abstract; figures</td>
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</table>

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Further documents are listed in the continuation of Box C. See patent family annex.

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* Special categories of cited documents:
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent but published on or after the international filing date
  - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
  - "P" document published prior to the international filing date but later than the priority date claimed
  - "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  - "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  - "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  - "Z" document member of the same patent family

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**Date of the actual completion of the international search**

28 September 2012

**Date of mailing of the international search report**

13/03/2013

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**Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Ridderkerk**
Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016

**Authorized officer**

Jeggy, Thierry

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Form PCT/ISA/210 (second sheet) (April 2000)
### INTERNATIONAL SEARCH REPORT

**Box No. II**  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. □ Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. □ Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 64(a).

**Box No. III**  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

- see additional sheet

1. □ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of additional fees.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- [I-II](completely) ; 23(partially)

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- Fees were accompanied by the applicant's protest but the applicable protest fees were not timely paid.
- No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11 (completely) ; 23 (partially)

   System for and method of generating a weld during start of a welding process, with control of a welding parameter when welding energy exceeds an energy output threshold

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2. claims: 12-22 (completely) ; 23 (partially)

   System for and method of generating a weld during start of a welding process, with control of a welding parameter when a duration exceeds a time threshold

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