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(54) Title: SIDE FEED SYSTEM FOR CZOCHRALSKI GROWTH OF SILICON INGOTS

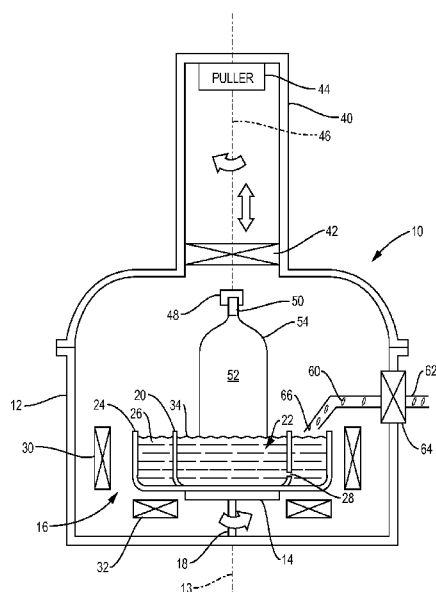


FIG. 1

(57) Abstract: A Czochralski growth system comprising a growth chamber, an isolation valve, a feed chamber containing feedstock, and a feeder is described. The isolation valve is disposed in at least one side wall of the growth chamber, and the feed chamber is vacuum sealed to the growth chamber through the isolation valve. The feeder is insertable into the growth chamber through the isolation valve and supplies the feedstock into the growth chamber. Preferably this system can be used for producing silicon ingots using a continuous Czochralski method.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/033606**A. CLASSIFICATION OF SUBJECT MATTER*****C30B 15/00(2006.01)i, C30B 29/06(2006.01)i, H01L 31/042(2006.01)i***

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)

C30B 15/00; C30B 29/06; C30B 15/02; C01B 33/02

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords:feed, raw material, chamber, valve, vibrator, hopper, shield, load cell?

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 09-175883 A (SHIN ETSU HANDOTAI CO LTD) 08 July 1997 See the abstract and fig. 1,4	1,15-19,23
A	See the abstract and fig. 1,4	2-14,20-22,24
X	WO 91-13192 A1 (NKK CORPORATION et al.) 05 September 1991 See the abstract and fig.1	1
A	See the abstract and fig.1	2-24
X	US 05037503 A (KAJIMOTO; TSUTOMU et al.) 06 August 1991 See the abstract and fig8, 6C, 26L	1
A	See the abstract and fig8, 6C, 26L	2-24

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

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"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

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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
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