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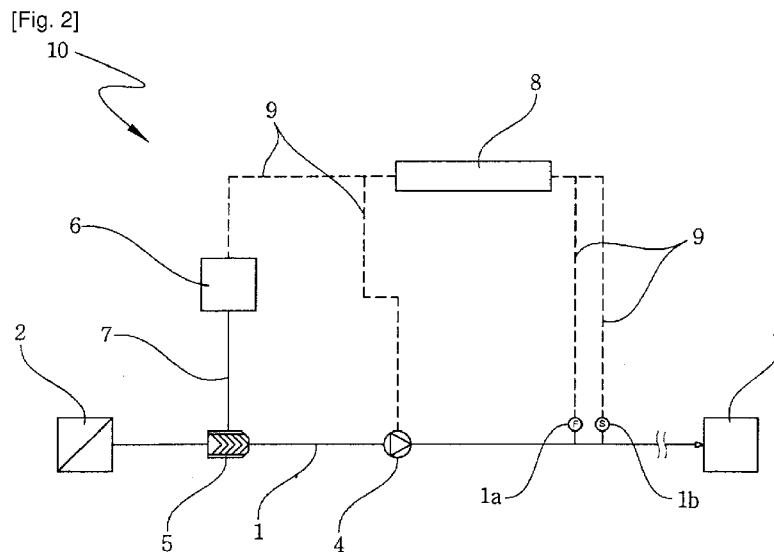
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(54) Title: DEVICE FOR INJECTING OZONE INTO BALLAST WATER FOR A SHIP



(57) Abstract: Disclosed is a device for injecting ozone into ballast water for a ship so as to sterilize and purify ballast water used in the ship, which is capable of easily controlling ozone concentration of ballast water in accordance with the level of process and the substantial flow rate of ballast water, by installing an ozone mixer at upstream site in front of a supply pump in a ballast water supplying tube for supplying a ballast water tank with ballast water from the sea-chest of a ship, whereby ozone gas may be merged into ballast water due to a strong absorption force generated during the operation of the supply pump.

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**A. CLASSIFICATION OF SUBJECT MATTER***C02F 1/78(2006.01)i, C02F 1/44(2006.01)i, B63B 13/00(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)

C02F 1/78; B01F 1/00; B01D 53/34; C02F 1/34

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) &amp; Keywords:ballast water, ozone, oxidizing agent,sterile agent,oxidant,chlorine.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2008-0077327 A (MITSUI ENGINEERING & SHIPBUILDING CO. et al.) See abstract, page 6, claim 1, figure 2.	1-4
A	JP 2004-160437 A (NIPPON YUUSEN KK et al.) 10 June 2004 See abstract, paragraph 20-28, figure 1.	1-4
A	KR 10-0896337 B1 (NK CO., LTD.) 07 May 2009 See abstract, page 4-5, claim 1, figure 1.	1-4
A	KR 10-0775238 B1 (NK CO., LTD.) 28 November 2007 See abstract, page 7, claim 5, figure 2.	1-4

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

\* Special categories of cited documents:

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"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

"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/KR2011/007158**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 10-2008-0077327 A	22.08.2008	JP 04-351707 B2 JP 2008-200590 A JP 4351707 B2	31.07.2009 04.09.2008 28.10.2009
JP 2004-160437 A	10.06.2004	JP 04-261955 B2	13.05.2009
KR 10-0896337 B1	07.05.2009	WO 2010-013903 A2 WO 2010-013903 A3	04.02.2010 04.02.2010
KR 10-0775238 B1	28.11.2007	None	