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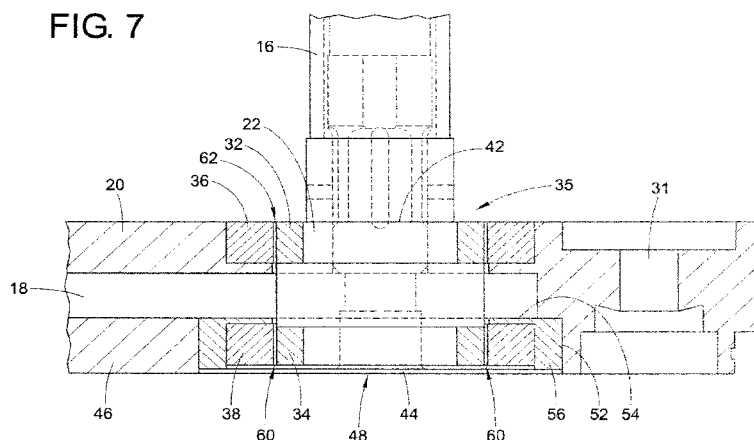
- with international search report (Art. 21(3))
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(54) Title: MOLD PUMP ASSEMBLY

FIG. 7



(57) **Abstract:** A molten metal pump assembly (10) and method to fill complex molds with molten metal, such as aluminum. The pump assembly includes an elongated shaft (16) connecting a motor (14) to an impeller (22). The impeller is housed within a chamber (18) of a base member such that rotation of the impeller draws molten metal into the chamber at an inlet (48) and forces molten aluminum through an outlet (50). A first bearing (36) is adapted to support the rotation of the impeller at a first radial edge (32) and a second bearing (38) is adapted to support the rotation of the impeller at a second radial edge. A bypass gap (60) is interposed between the second bearing and the second radial edge. Molten metal leaks through the bypass gap at a predetermined rate to manipulate a flow rate and a head pressure of the molten metal such that precise control of the flow rate is achieved.



INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. F04D7/04 F04D29/047 F04D7/06
ADD.

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)

F04D

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, 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 4 475 866 A (KAMBE MITSURU [JP] ET AL) 9 October 1984 (1984-10-09) column 3, lines 38-41; figure 4 -----	1-21
X	US 2010/266396 A1 (THUT BRUNO H [US]) 21 October 2010 (2010-10-21) page 1, column 2, paragraph 15; figure 5 -----	1-21
X	US 5 685 701 A (CHANDLER RICHARD C [US] ET AL) 11 November 1997 (1997-11-11) abstract; figure 6 -----	1-21
X	US 5 716 195 A (THUT BRUNO H [US]) 10 February 1998 (1998-02-10) column 6, lines 47-56; figure 3 -----	1-21
X	EP 1 229 250 A1 (THUT BRUNO H [US]) 7 August 2002 (2002-08-07) abstract; figure 18 -----	1-21

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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