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Shimizu

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(54) **CONCRETE MIXER TRUCK**
(75) Inventor: **Hiroyuki Shimizu, Saitama (JP)**
(73) Assignee: **KYB Corporation, Tokyo (JP)**
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4,544,275	A *	10/1985	Hudelmaier	366/30
7,489,993	B2 *	2/2009	Coffee et al.	701/32.3
7,866,875	B2 *	1/2011	Abe et al.	366/61
8,727,604	B2 *	5/2014	Compton et al.	366/61
2002/0015354	A1 *	2/2002	Buckelew	366/2
2007/0185636	A1 *	8/2007	Cooley et al.	701/50
2008/0316856	A1 *	12/2008	Cooley et al.	366/142
2014/0198599	A1 *	7/2014	Kamijo	366/61

FOREIGN PATENT DOCUMENTS

GB	1480395	A	7/1977
JP	2005022640	A	1/2005
WO	2005080058	A1	9/2005

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OTHER PUBLICATIONS

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* cited by examiner

Primary Examiner — David Sorokin
(74) *Attorney, Agent, or Firm* — Hauptman Ham, LLP

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See application file for complete search history.

(57) **ABSTRACT**

A concrete mixer truck includes: a driving device that drives a mixer drum to rotate; a pressure sensor that detects a pressure of the working fluid in the driving device; a material introduction determination unit that determines whether or not a material for generating the mixed concrete has been introduced into the mixer drum; a pressure determination unit that determines whether or not the pressure of the working fluid detected by the pressure sensor has fallen to a set pressure set in advance in accordance with a carrying amount and a fluidity of the mixed concrete after the introduction of the materials for the mixed concrete into the mixer drum; and a notification device that notifies an operator that the pressure of the working fluid in the driving device has fallen to the set pressure on the basis of the determination made by the pressure determination unit.

(56) **References Cited**
U.S. PATENT DOCUMENTS
2,703,227 A * 3/1955 Hughes B28C 5/4241 177/116
4,097,925 A * 6/1978 Butler, Jr. B28C 5/4213 366/2

10 Claims, 3 Drawing Sheets

