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(72) Inventors:
• **Sakagami, Nobuyuki**
Tokyo Tokyo (JP)
• **Kameda, Hideaki**
Tokyo Tokyo (JP)
• **Miyashita, Hiroshi**
Tokyo Tokyo (JP)

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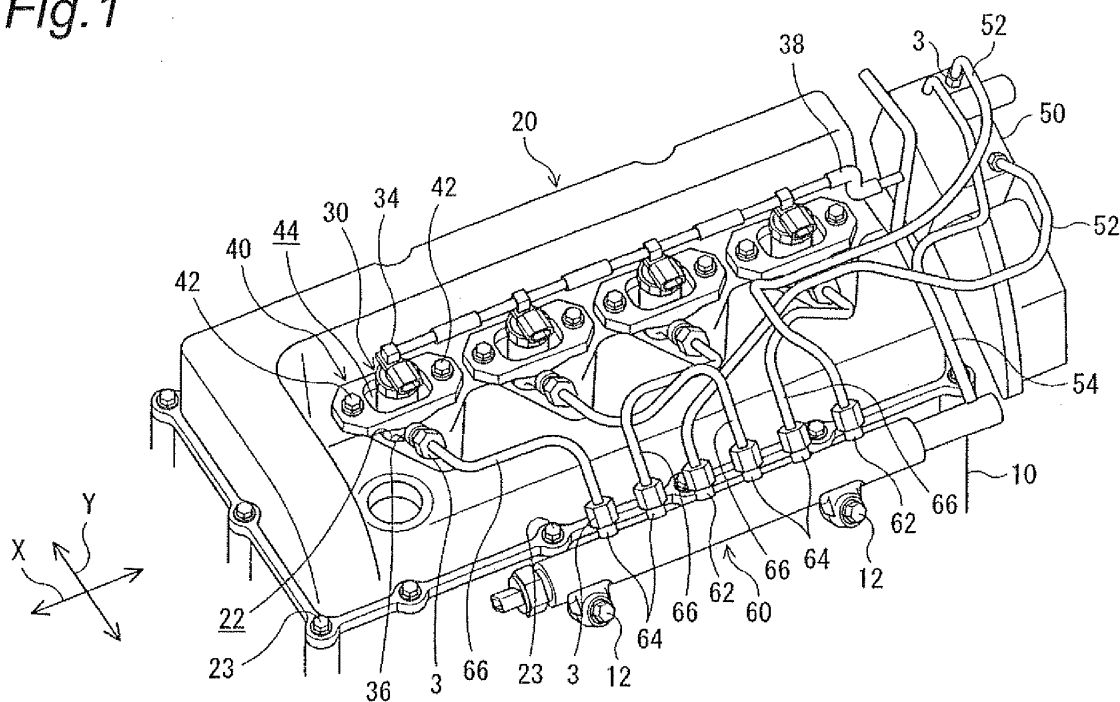
(71) Applicant: **Mitsubishi Jidosha Kogyo Kabushiki Kaisha**
Tokyo 108-8410 (JP)

(74) Representative: **Vossius & Partner**
Patentanwälte Rechtsanwälte mbB
Siebertstrasse 3
81675 München (DE)

(54) Injector removal tool

(57) There is provided an injector removal tool for removing an injector from a cylinder head. A support platform is fixed to the cylinder head. A pivot portion is mounted on the support platform. A arm portion is provided so as to rotate on the pivot portion as a fulcrum. A transfer

portion is supported on the arm portion at one end in a position lying spaced away from the pivot portion and is locked on the injector at the other end thereof. A force exerted on the one end to rotate the arm portion is transferred as a force to remove the injector at the other end.

Fig. 1**EP 2 347 861 A3**



EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 20 2008 012338 U1 (KLANN SPEZIAL WERKZEUGBAU GMBH [DE]) 20 November 2008 (2008-11-20) * abstract; figure 3 *	1	INV. B25B27/00 B25B27/02
A,D	JP 2008 261273 A (HONDA MOTOR CO LTD) 30 October 2008 (2008-10-30) * figures 1,2 *	1	
A	US 2003/033714 A1 (KING KENNETH E [US]) 20 February 2003 (2003-02-20) * abstract; figures 4a-5b *	1	
A	DE 91 11 245 U1 (KLANN, HORST [DE]) 21 November 1991 (1991-11-21) * figures 1-3 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			B25B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 12 October 2017	Examiner Pothmann, Johannes
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202008012338 U1	20-11-2008	DE 202008012338 U1	20-11-2008
		EP 2163347 A2	17-03-2010
JP 2008261273 A	30-10-2008	JP 4361574 B2	11-11-2009
		JP 2008261273 A	30-10-2008
US 2003033714 A1	20-02-2003	NONE	
DE 9111245 U1	21-11-1991	NONE	