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Applicant: **HALLIBURTON COMPANY**  
**P.O. Drawer 1431**  
**Duncan Oklahoma 73536(US)**

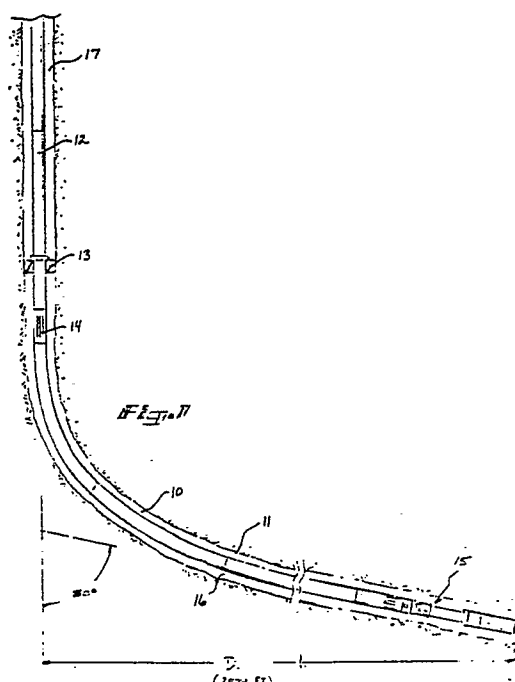
Inventor: **George, Flint R.**  
**6188 Magnolia**  
**Katy Texas 77449(US)**  
Inventor: **George, Kevin R.**  
**P.O. Box 172**  
**Columbus Texas 78934(US)**

Representative: **Wain, Christopher Paul et al**  
**A.A. THORNTON & CO. Northumberland**  
**House 303-306 High Holborn**  
**London WC1V 7LE(GB)**

**Method and apparatus for perforating well bores.**

A method and apparatus for perforating oil well casing in a well bore, with particular advantage in highly deviated well bores, uses a perforating gun assembly (15) run into the well bore (10) using the production tubing (12). A sliding sleeve (14) is connected in the tubing above the gun and a packer (13) is run in for setting above the sliding sleeve and gun. The assembly is run into the well bore until the gun extends into the highly deviated portion of the bore where the well casing is to be perforated. The packer is set into place, isolating that portion of the well bore below the packer from that portion above the packer, and the sliding sleeve is opened using a wireline or other means. The well bore below the packer is pressurized through the tubing to ensure that the packer is properly set. The pressure is then allowed to bleed off and the sliding sleeve is closed. The gun uses a differential pressure-actuated firing head which is actuated upon a predetermined differential pressure between the production tubing bore and the annulus between the tubing and the casing. Thus, a well casing can be perforated using relatively low values of actuating pressure, which

provides greater control over perforating conditions such as underbalance.



**EP 0 288 238 A3**



DOCUMENTS CONSIDERED TO BE RELEVANT					
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)		
A	GB-A-2 184 214 (HALLIBURTON CO.) * Abstract * ---	1-10	E 21 B 43/116 E 21 B 43/118 E 21 B 34/10		
A	GB-A-2 169 019 (GEO VANN INC.) * Abstract; claims 1-4 * ---	1,6			
A	US-A-4 616 718 (GAMBERTOGLIO) * Column 4, line 58 - column 5, line 56 * -----	1,6			
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)		
			E 21 B		
The present search report has been drawn up for all claims					
Place of search THE HAGUE		Date of completion of the search 27-07-1989	Examiner HEDEMANN, G. A.		
<table><tr><td><b>CATEGORY OF CITED DOCUMENTS</b> 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</td><td>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 ..... &amp; : member of the same patent family, corresponding document</td></tr></table>				<b>CATEGORY OF CITED DOCUMENTS</b> 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
<b>CATEGORY OF CITED DOCUMENTS</b> 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				