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Wellbore tester valve.

An elongated valve means (10) is operable between a closed and opened position and is connected to a tubing string (14) for flowing fluid along an isolated flow path from a location downhole in a wellbore (11) to the surface. The valve means includes a main housing (41) within which a mandrel (38) is axially aligned. A packer (17) divides the borehole annulus into an upper and lower annular area. The valve device includes an annular power chamber (62) formed between the mandrel and the main body, and slidably receives a power piston (63) therein. The power piston is connected to a medial part of the mandrel. Metered flow from the upper borehole is indirectly effected on the piston face, thereby driving the piston uphole and carrying the mandrel therewith. The lower end of the mandrel has ports (75) formed through a sidewall thereof which are brought into registry with a complementary port (70) formed through the sidewall of the main housing. The housing port is in fluid communication with the lower borehole annulus. Detents (54) formed in the mandrel are engageable by a latch means (53) which positions the mandrel axially as the ports are brought into registry with one another. The latch means is retracted by a piston operated arm (51). Fluid pressure from the upper borehole annulus indirectly actuates the piston operated arm. The movement of the piston actuated arm and the power piston sequentially occur so that the latch means successively engages adjacent detents while successive ones of the mandrel ports are brought into registry with the port of the housing. Accordingly, the valve means is opened to admit fluid thereinto and up to the surface of the ground, whereupon the valve means is then

moved to a first closed position, and thereafter again moved into the open position in response to hydrostatic pressure alternately being effected within the upper borehole annulus.

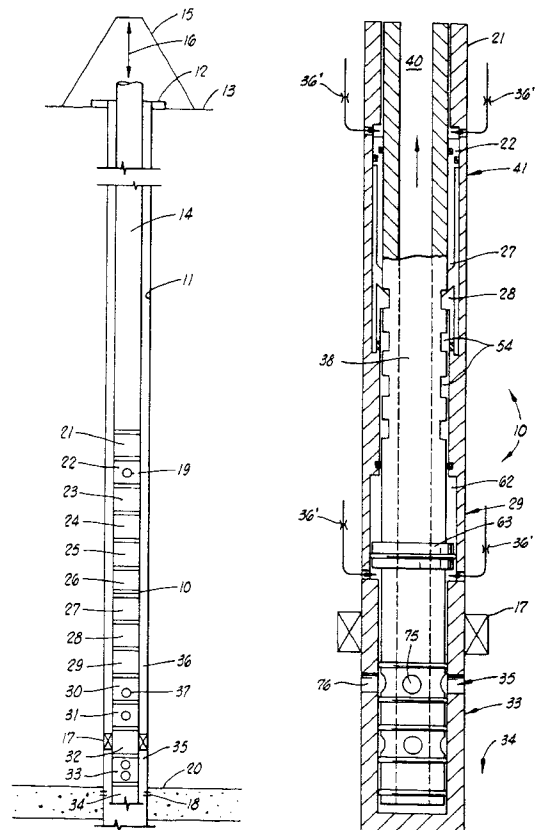


FIG. 1

FIG. 2



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EUROPEAN SEARCH REPORT

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EP 91 30 8314

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.5)
Y A	US-A-4 691 779 (MCMAHAN) * column 12, line 34 - column 15, line 40; figures 1A-1F * ---	1-4 5-9	E21B34/10
Y A	US-A-4 846 272 (LEGGETT) * column 7, line 40 - column 8, line 21; figures * ---	1-4 5,6	
A	US-A-4 646 838 (MANKE) * column 10, line 56 - column 12, line 49; figures 1A-1F * ---	1,3-5,8	
A,D	US-A-3 858 649 (WRAY ET AL.) * column 12, line 16 - column 13, line 26; figures * ---	1,2,5,8	
A,D	US-A-4 444 268 (BARRINGTON) * column 10, line 61 - column 12, line 68; figures * -----	1,2,4,5, 8	TECHNICAL FIELDS SEARCHED (Int. Cl.5) E21B
The present search report has been drawn up for all claims			
Place of search THE HAGUE	Date of completion of the search 14 JANUARY 1993	Examiner LINGUA D.G.	
CATEGORY OF CITED DOCUMENTS		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	
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			

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