SG 9700280-2

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : B01J 8/04 — A1

(11) International Publication Number: WO 96/34683

(43) International Publication Date: 7 November 1996 (07.11.96)

(21) International Application Number: PCT/IB96/00544

(22) International Filing Date: 19 April 1996 (19.04.96)

(30) Priority Data:
08/435,564 5 May 1995 (05.05.95) US

(71) Applicant: CHEVRON U.S.A. INC. [US/US]; 555 Market Street, San Francisco, CA 94120 (US).

(72) Inventors: STANGELAND, Bruce, C.; 691 Cragmont Avenue, Berkeley, CA 94708 (US). PARIMI, Krishniah; 4460 Shellflower Court, Concord, CA 94518 (US). CASH, Dennis, R.; 19 Meadow Lane, Novato, CA 94947 (US).

(74) Agents: ZAVELL, A., Stephen et al.; Chevron Corporation, Room 402, 555 Market Street, San Francisco, CA 94120 (US).

(81) Designated States: CA, CN, JP, KR, RU, SG, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published

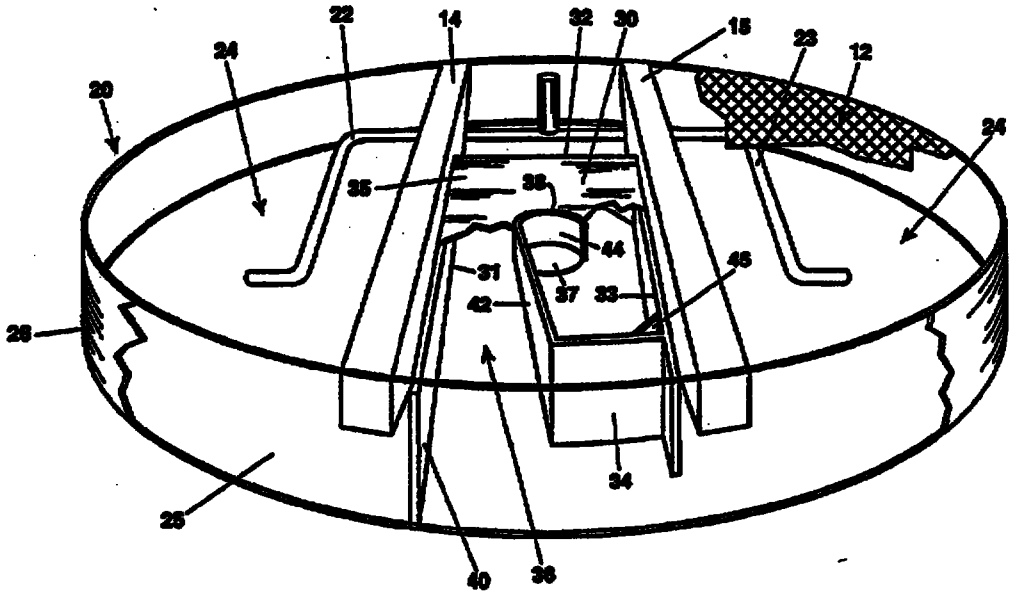
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(1) PCT Pub + SR

(2) Replacement Sheet 24-7-97

(54) Title: DISTRIBUTOR ASSEMBLY FOR MULTI-BED DOWN-FLOW CATALYTIC REACTORS



(57) Abstract

A multi-bed, down-flow reactor (10) includes several distributor assemblies (20) each having a centrally located mixing chamber (30) and an annular collecting and mixing trough (24) surrounding the mixing chamber (30). The mixing chamber (30) has an inlet (36) at one side thereof, an outlet (37) in its bottom wall (25), and a quench gas inlet (38) in its top wall (35) above the outlet (37). A divider wall (40) traverses the annular trough (24) adjacent to the inlet (36) to cause the pool of liquid collected in the trough (24) to flow in a circular pattern around the mixing chamber (30) to the inlet (36). This ensures that the liquid circulating through the trough (24) is well mixed with the liquid raining down from the catalyst bed. Turbulent and spiraling flow patterns generated within the chamber further mix the liquid and gas and entrain quench gas in the liquid and gas stream.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic			SE	Sweden
CG	Congo	KR	Republic of Korea	SG	Singapore
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LR	Liberia	SZ	Swaziland
CS	Czechoslovakia	LT	Lithuania	TD	Chad
CZ	Czech Republic	LU	Luxembourg	TG	Togo
DE	Germany	LV	Latvia	TJ	Tajikistan
DK	Denmark	MC	Monaco	TT	Trinidad and Tobago
EE	Estonia	MD	Republic of Moldova	UA	Ukraine
ES	Spain	MG	Madagascar	UG	Uganda
FI	Finland	ML	Mali	US	United States of America
FR	France	MN	Mongolia	UZ	Uzbekistan
GA	Gabon	MR	Mauritania	VN	Viet Nam