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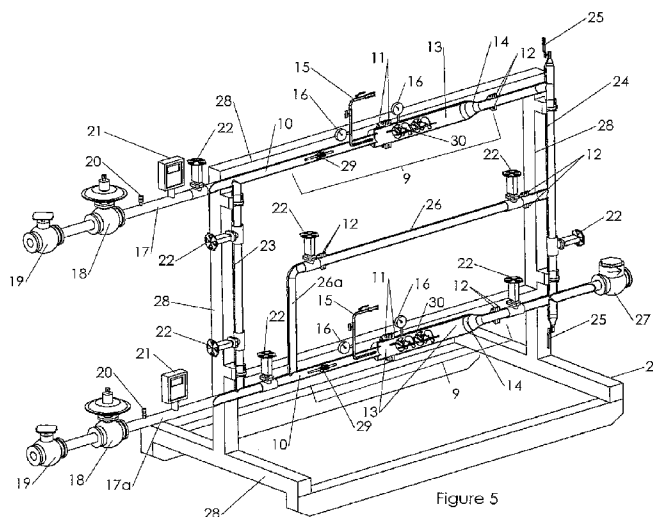


Figure 5

(57) Abstract: A mixing device comprising three mixing assemblies and first (17) and second (17a) horizontal inlet arms, wherein the mixing assemblies are arranged horizontally on a frame (28), with one mixing assembly on the bottom, one on the top, and one in the middle. Each mixing assembly comprises a first housing (1), a second housing (2), and a swedge (3). The ratio of the inside diameter of the first housing to the inside diameter of the second housing is 1 :2, the change in diameter between the first and second housing is abrupt, and the first housing extends into the second housing by a certain distance. Inside the first housing are an inlet agitator (6) and injection nozzle (7), and inside the second housing is a static mixer (8). The injection nozzle is located proximate to the point at which the change in diameter occurs between the first and second housing.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/71606

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC: **B01F 5/04( 2006.01),5/06( 2006.01)**

USPC: 366/173.1,174.1,181.5  
 According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 366/162.1, 167.1, 173.1, 173.2, 174.1, 175.2, 181.5; 137/896; B01F 5/04, 5/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 None

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2,831,754 A (MANKA) 22 April 1958 (22.04.1958), see entire document.	1-5, 30
A	US 4,408,890 A (BECKMANN) 11 October 1983 (11.10.1983), see entire document.	1-5, 30
A	US 6,305,835 B1 (FARRAR et al. ) 23 October 2001 (23.10.2001), see entire document.	6-29

Further documents are listed in the continuation of Box C.       See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 21 June 2008 (21.06.2008)	Date of mailing of the international search report <b>16 JUL 2008</b>
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Charles E. Cooley Telephone No. (571) 272-1700  DEBORAH A. THOMAS PARALEGAL SPECIALIST <i>PUT</i>
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**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US07/71606

Continuation of B. FIELDS SEARCHED Item 3:

Google

search term: swedge

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/71606

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.: 31 and 32  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
  3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
  4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
  - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
  - No protest accompanied the payment of additional search fees.